CFD-503/505

SERVICE MANUAL

US Model
Canadian Model
CFD-503/505
AEP Model
Australian Model
CFD-505

Photo: CFD-503

Model Name Using Similar Mechanism	CD Section	CFD-550
	Tape Section	CFS-208
CD Mechanism Type		KSM-213BAN
Optical Pick-Up Type		KSS-213B
Tape Transport Mechanism Type		MF-311

SPECIFICATIONS

CD player section

System
Compact disc digital audio system
Laser diode properties
Material: GaAlAs
Wave length: 780 nm
Emission duration: Continuous
Laser output: Less than 44.6 µW
(This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Spindle speed
200 r/min (rpm) to 500 r/min (rpm) (CLV)

Number of channels
2

Frequency response
20-20,000 Hz +1/-2 dB

Wow and flutter
Below measurable limit

Radio section

Frequency range
FM: 87.6-108 MHz (US, Canadian, Australian)
87.6-107 MHz (AEP)
65-108 MHz (East European)
AM: 530-1,710 kHz (US, Canadian)
531-1,602 kHz (AEP, East European)
530-1,605 kHz (Australian)

Aerials
FM: Telescopic aerial
AM: Built-in ferrite bar aerial

Cassette-corder section

Recording system
4-track 2 channel stereo

Fast winding time
Approx. 115 s (sec.) with Sony cassette C-60

Frequency response
TYPE I (normal): 70-10,000 Hz

General

Speaker
Full range: 10 cm dia., 3.2 ohms, cone type (2)
Tweeter: 2 cm (2)

Outputs
Headphones jack (stereo minijack)
For 16-68 ohms impedance headphones

Maximum power output
2.3 W + 2.3 W

Power requirements
120 V AC, 60 Hz (US, Canadian)
220-230 V AC, 50 Hz (AEP, East European)
230-240 V AC, 50 Hz (Australian)
9 V DC, 6 R20 (size D) batteries

Power consumption
AC 20 W

Battery life

FM recording	
Sony R20P: approx. 13.5 h	
Sony alkaline LR20: approx. 19 h	
Tape playback	
Sony R20P: approx. 7.5 h	
Sony alkaline LR20: approx. 12 h	
CD playback	
Sony R20P: approx. 2.5 h	
Sony alkaline LR20: approx. 4.5 h	

Dimensions
Approx. 520×253×256 mm (w/h/d)
(20 1/2 × 10 × 10 1/8 inches) (incl. projecting parts)

Mass
Approx. 5.8 kg (12 lb. 13 oz) (incl. batteries)

Supplied accessory
AC power cord (1)

Design and specifications are subject to change without notice.

CD RADIO CASSETTE-CORDER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

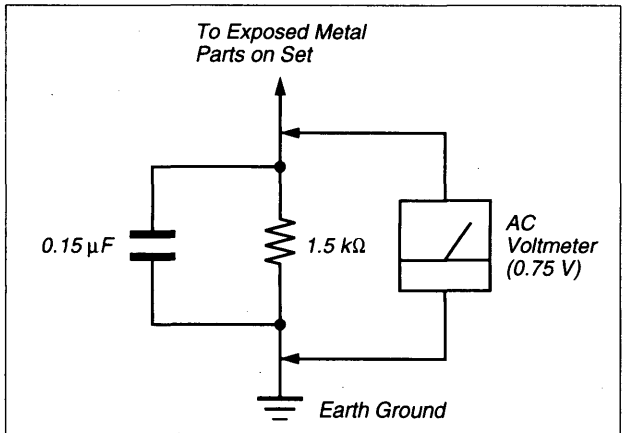


Fig. A. Using an AC voltmeter to check AC leakage.

TABLE OF CONTENTS

1. SERVICING NOTE 3

2. GENERAL 4

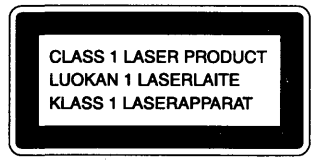
3. DISASSEMBLY 13

4. ADJUSTMENTS
4-1. Mechanical Adjustments 18
4-2. Electrical Adjustments 18

5. DIAGRAMS
5-1. Printed Wiring Boards (CD Section) 27
5-2. Schematic Diagram (CD Section) 29
5-3. Schematic Diagram (Audio Section) 34
5-4. Printed Wiring Boards (Audio Section) 37
5-5. IC Pin Function Description 40

6. EXPLODED VIEWS 42

7. ELECTRICAL PARTS LIST 50



This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

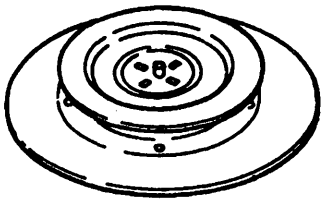
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTE

CHUCK PLATE JIG ON REPAIRING

On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

• Code number of Chuck Plate Jig: X-4918-255-1



NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

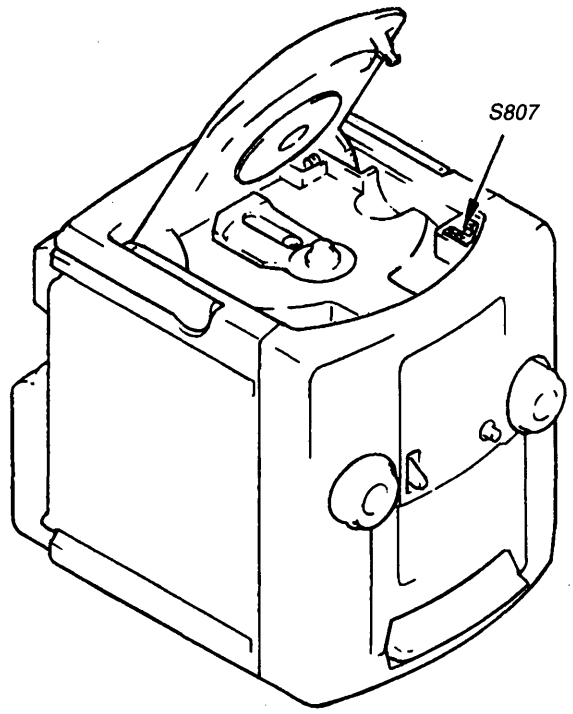
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

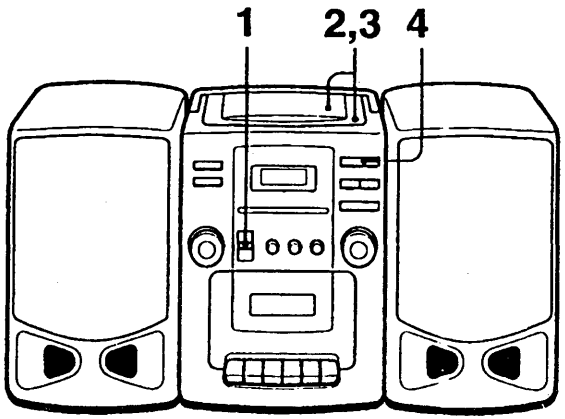
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Turn POWER switch on with no disc inserted and make Function switch to CD position.
2. Open the lid for CD.
3. Turn on S807 as following figure.
4. Press ▷ key.
5. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
   Objective lens moves up and down three times for the focus search.



Playing a CD

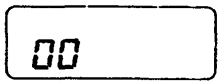


For hookup instructions, see pages 16-17.

1 FUNCTION

Set FUNCTION to CD.

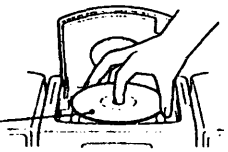
Display



2 OPEN/CLOSE

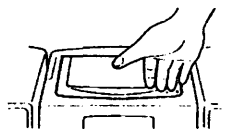
Press OPEN/CLOSE to open the CD compartment and place the CD on the CD compartment.

With the label side up



3 OPEN/CLOSE

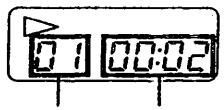
Close the CD compartment.



4 PLAY/PAUSE

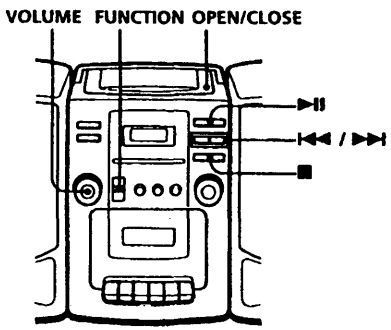
Press ▶II.

The player plays all the tracks once.



Track number Playing time

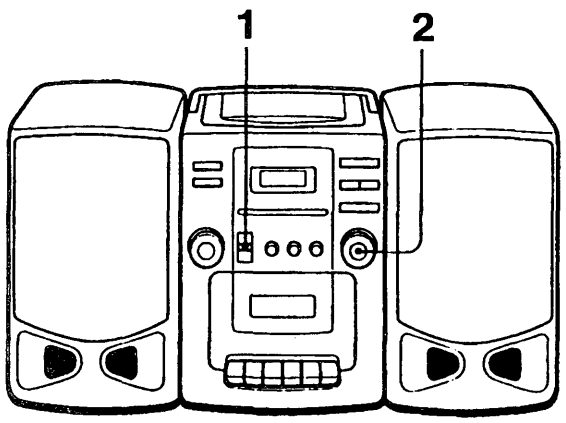
Use these buttons for additional operations



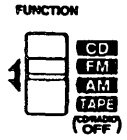
To	Do this
Adjust the volume	Turn VOLUME.
Stop playback	Press ■.
Pause playback	Press ▶II. Press the button again to resume play after pause.
Go back to the beginning of the current track.	Press I◀◀.
Go to the next track	Press ▶▶I.
Remove the CD	Press OPEN/CLOSE.
Turn on/off the player	Set FUNCTION to TAPE (CD/RADIO OFF).

This section is extracted from instruction manual.

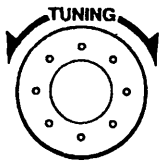
Listening to the radio



For hookup instructions, see pages 16-17.

1 

Set FUNCTION to FM or AM to select the band you want.

2 

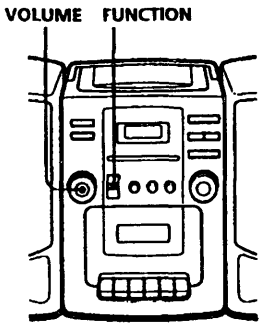
Turn TUNING to tune in a radio station.

When the radio tunes to an FM stereo broadcast, FM ST indicator lights up. If the received FM stereo is too weak, the reception becomes monaural, and the FM ST indicator will go off.

Tip

If the FM broadcast is noisy, set FM MODE switch at the rear to "MONO". The radio will play in monaural (European models only).

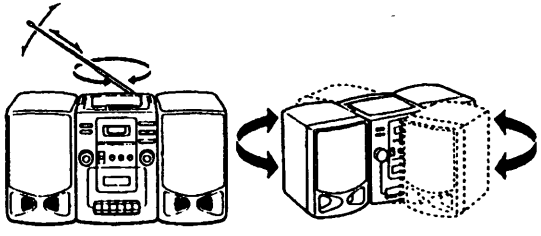
Use these buttons for additional operations



To	Do this
Adjust the volume	Turn VOLUME.
Turn on/off the radio	Set FUNCTION to TAPE (CD/RADIO OFF).

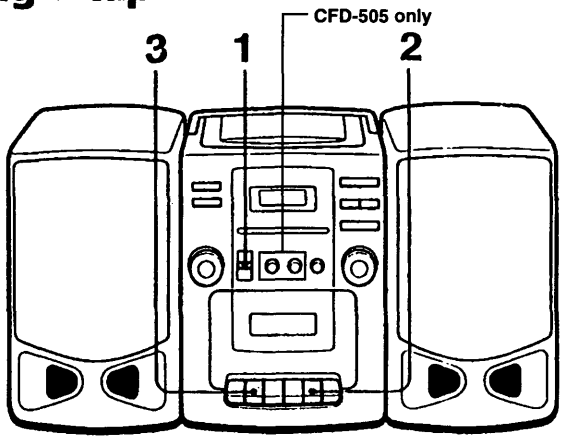
To improve broadcast reception

Reorient the antenna for FM. Reorient the player itself for AM.



For FM For AM

Playing a tape



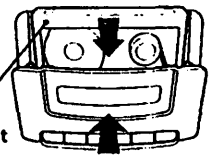
For hookup instructions, see pages 16-17.

1 FUNCTION

Set FUNCTION to TAPE (CD/RADIO OFF).

2 STOP/EJECT

Press ■⏏ to open the tape compartment and insert a recorded tape. Use TYPE I (normal) tape only. Close the compartment.

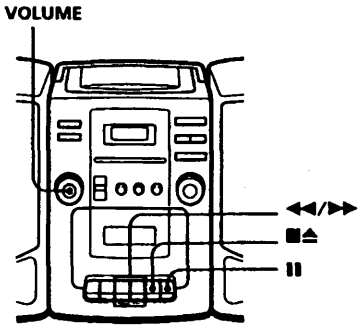


3 PLAY

Press ▶.

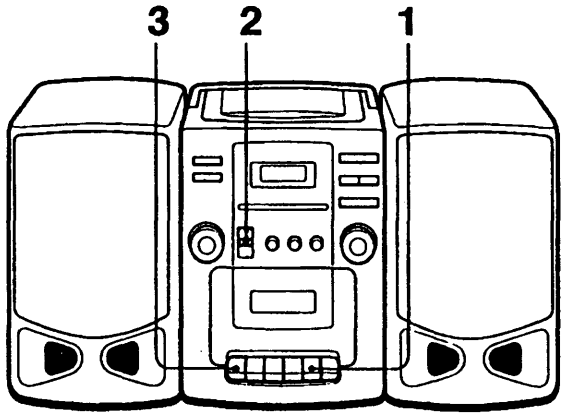
The player starts playing.

Use these buttons for additional operations



To	Do this
Adjust the volume	Turn VOLUME.
Stop playback	Press ■⏏.
Fast-forward or rewind the tape	Press ▶▶ or ◀◀.
Pause playback	Press II. Press the button again to resume play after pause.
Eject the cassette	Press ■⏏.

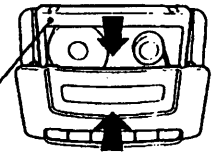
Recording on a tape



For hookup instructions, see pages 16-17.

1 STOP/EJECT

Press ■⏏ to open the tape compartment and insert a blank tape. Use TYPE I (normal) tape only.



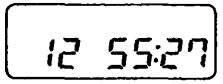
With the side you want to record on facing forward

2 FUNCTION

Select the program source you want to record.

To record from the CD player, set FUNCTION to CD and insert a CD (see page 4).

Display



FUNCTION

To record from the radio, set FUNCTION to FM or AM; and tune in the station you want (see page 6).

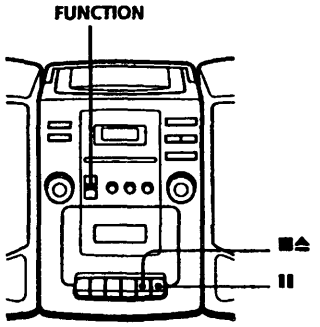
3 REC

Press ● to start recording. (► is depressed automatically).

Tips

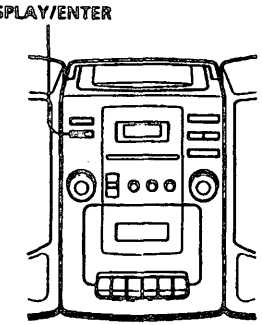
- Adjusting the volume or the audio emphasis (see page 18) will not affect the recording level and quality.
- For the best results, use the AC power as a power source for recording.
- To erase recording, proceed as follows:
  1 Insert the the tape whose recording you want to erase into the tape compartment.
  2 Set FUNCTION to TAPE (CD/RADIO OFF).
  3 Press ●.

Use these buttons for additional operations



To	Do this
Stop recording	Press ■⏏.
Pause recording	Press II. Press the button again to resume recording.
Turn on/off the player	Set FUNCTION to TAPE (CD/RADIO OFF).

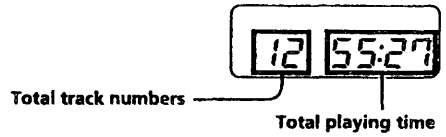
Using the display



You can check information about the CD using the display.

Checking the total track numbers and playing time

Press DISPLAY/ENTER in stop mode.



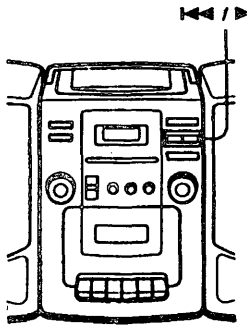
Checking the remaining time

Press DISPLAY/ENTER while playing a CD.

To display	Press DISPLAY/ENTER
Remaining time on the current track*	Once
Remaining time on the CD and the number of tracks left	Twice
Playing time and the current track number	Three times

* For a track whose number is more than 21, the remaining time appears as "- -:- -" in the display.

Locating a specific point in a track



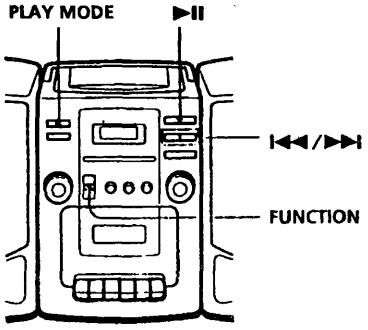
You can locate a specific point in a track while playing a CD using ⏭ or ⏮ AMS/SEARCH.

To locate	Press
a point while listening to the sound	⏭ (forward) or ⏮ (backward) while playing and hold down until you find the point.
a point while observing display	⏭ (forward) or ⏮ (backward) in pause and hold down until you find the point.

Playing tracks repeatedly

(Repeat Play)

You can play tracks repeatedly in normal, shuffle or program play modes (see page 15).



1 Set FUNCTION to CD.

2 Press PLAY MODE until the repeat mode you want appears in the display.

To repeat	Select
a single track	REP 1
all the tracks	REP ALL
tracks in random order	SHUF REP
programed tracks	PGM REP

3 Do either of the following to start repeat play:

- **When you've selected REP 1,** select the track by pressing ▶▶I or I◀◀, then press ▶II.
- **When you've selected REP ALL and SHUF REP,** press ▶II.
- **When you've selected PGM REP,** program tracks (see step 3 on page 15), then press ▶II.

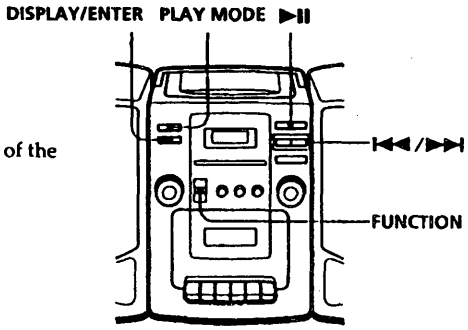
To cancel Repeat Play

Press PLAY MODE until "REP" disappears in the display.

Creating your own program

(Program Play)

You can arrange the playing order of the tracks on a CD.



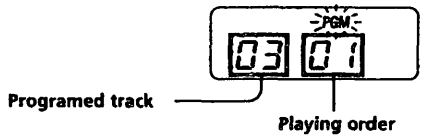
Tips

- You can play the same program again, since the program is saved until you switch FUNCTION or until you open the CD compartment.
- The current program will be erased if you switch FUNCTION or if you open the CD compartment.
- You can record your own program. After you've created the program, insert a blank tape and press ● to start recording.

1 Set FUNCTION to CD.

2 Press PLAY MODE until "PGM" appears in the display.

3 Press ▶▶I or I◀◀ then press DISPLAY/ENTER for the tracks you want to program in the order you want. You can program up to 20 tracks.



4 Press ▶II to start program play.

To cancel Program Play

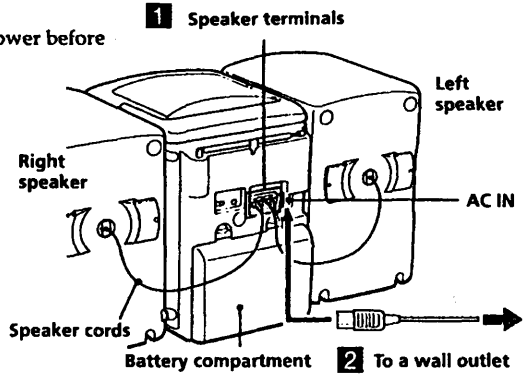
Press PLAY MODE until "PGM" disappears in the display.

To change the current program

Press ■ once if the CD is stopped and twice if the CD is playing. The current program will be erased. Then create a newprogram following the programing procedure.

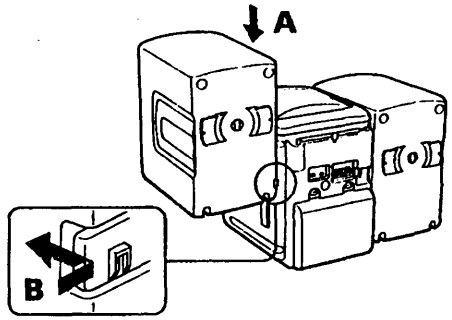
Hooking up the system

Make sure you turn off the power before making any connections.

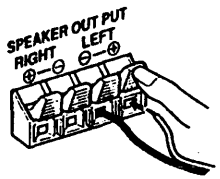


1 Hooking up the speakers

1 Align the grooves and slide the speaker box down until it snaps into place (A).



2 Connect the black wires to (-) minus and the red wires to (+) plus terminals; the right speaker wires to the RIGHT and the left speaker wires to the LEFT terminals of SPEAKER OUTPUT.



Tip

To detach the speakers, unlock speaker (see B on the diagram) and slide the speaker box all the way up and away from the player.

Tip

Only for the customers supplied with an AC plug adaptor:

Use the supplied AC plug adaptor if the plug of the AC power cord does not match your outlet.

Note

Use the AC power source whenever you record since recording consumes much power.

Tip

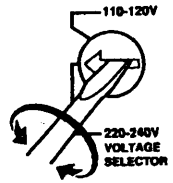
Replace the batteries when the OPR/BATT indicator dims or when the player stops operating. Replace all the batteries with new ones. Before you replace the batteries, be sure to take out the CD from the player.

2 Connecting the AC power sources

Insert one end of the supplied AC power cord to the AC IN socket located at the rear of the player, and the other end to the wall outlet.

Adjusting the voltage (excluding models for Europe)

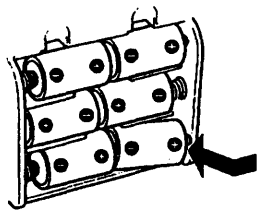
Be sure to set the VOLTAGE SELECTOR (at the bottom) to your local power supply.



Using the player on batteries

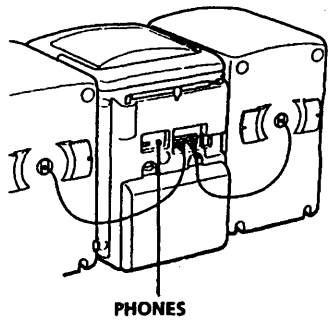
Insert six R20 (size D) batteries (not supplied) into the battery compartment.

To use the player on batteries, disconnect the AC power cord from the player.



Listening through the headphones

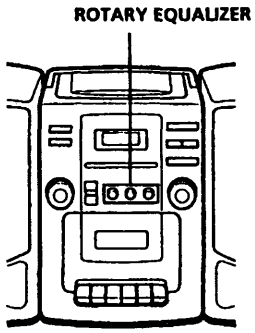
Insert the headphones to the PHONES jack at the rear.



Adjusting the audio emphasis

(ROTARY EQUALIZER/MEGA BASS)

You can adjust the audio emphasis of the sound you are listening to.

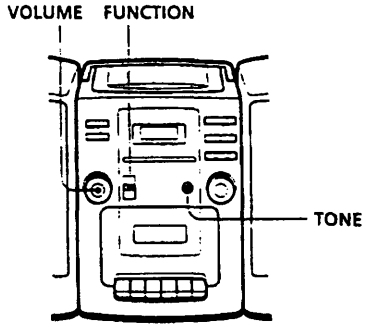


Selecting the sound characteristic

Turn ROTARY EQUALIZER to select the audio emphasis you want.

Frequency coverage	Turn the control clockwise (to +10)	Turn the control counterclockwise (to -10)
MEGA BASS 100Hz	to increase heavy bass sounds	to decrease heavy bass sounds
1kHz	to provide more presence of vocals	to provide less presence of vocals
10kHz	to increase the brightness of the sound or to reduce tape hiss	to decrease the brightness of the sound or to reduce tape hiss

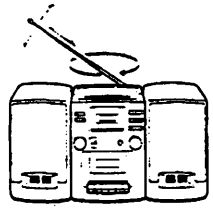
Use these buttons for additional operations



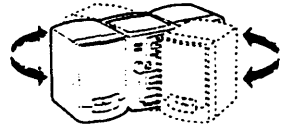
To	Do this
Adjust the volume	Turn VOLUME.
Adjust the tone	Turn TONE.
Turn on/off the radio	Set FUNCTION to TAPE (CD/RADIO OFF).

To improve broadcast reception

Reorient the antenna for FM. Reorient the player itself for AM.



For FM



For AM

Precautions

On safety

- As the laser beam used in the CD player section is harmful to the eyes, do not attempt to disassemble the casing. Refer servicing to qualified personnel only.
- Should any solid object or liquid fall into the player, unplug the player, and have it checked by qualified personnel before operating it any further.

On power sources

- For AC operation, check that the player's operating voltage is identical with your local power supply (see "Specifications") and use the supplied AC power cord; do not use any other type. The voltage selector is located at the bottom of the player (excluding models for Europe).
- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- For battery operation, use six R20 (size D) batteries.
- When the batteries are not to be used, remove them to avoid damage that can be caused by battery leakage or corrosion.
- The nameplate indicating operating voltage, power consumption, etc. is located at the rear.

On placement

- Do not leave the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.
- Do not place anything within 10 mm of the side of the cabinet. The ventilation holes must be unobstructed for the player to operate properly and prolong the life of its components.
- If the player is left in a car parked in the sun, be sure to choose a location in the car where the player will not be subjected to the direct rays of the sun.
- Since a strong magnet is used for the speakers, keep personal credit cards using magnetic coding or spring-wound watches away from the player to prevent possible damage from the magnet.

On operation

- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the CD player section. Should this occur, the player will not operate properly. In this case, remove the CD and wait about an hour for the moisture to evaporate.
- If the player has not been used for a long time, set it in the playback mode to warm it up for a few minutes before inserting a CD or cassette.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

continued

Notes on CDs

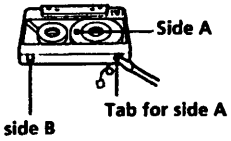
- Before playing, clean the CD with a cleaning cloth. Wipe the CD from the center out.

- Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for vinyl LPs.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight as there can be a considerable rise in temperature inside the car.
- After playing, store the CD in its case.

If there is a scratch, dirt or fingerprints on the CD, it may cause tracking error.

Notes on cassettes

- Break off the cassette tab from side A or B to prevent accidental recording. If you want to reuse the tape for recording, cover the broken tab with adhesive tape.

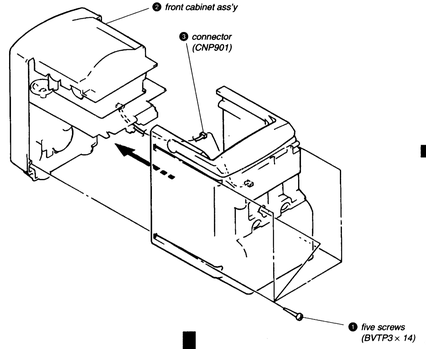


- To record on a tape with its tab broken off, cover the respective tab hole for side A or B with adhesive tape.
- The use of a cassette with more than 90 minutes of play time is not recommended except for long, continuous recording or playback.

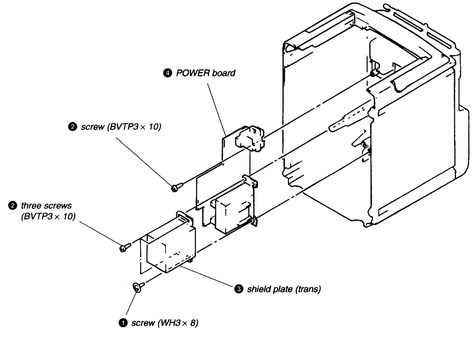
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

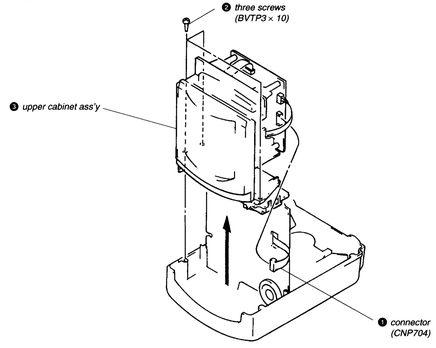
FRONT CABINET ASS'Y



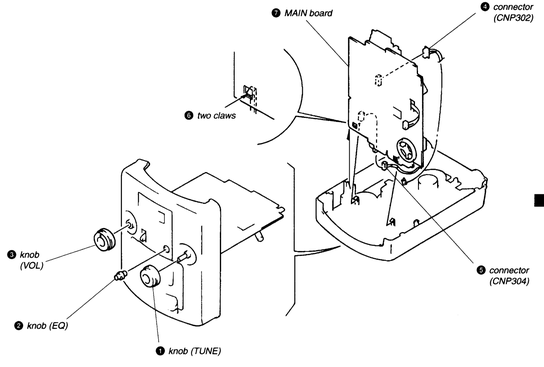
POWER BOARD



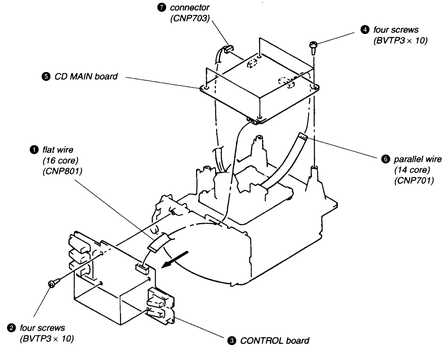
UPPER CABINET ASS'Y



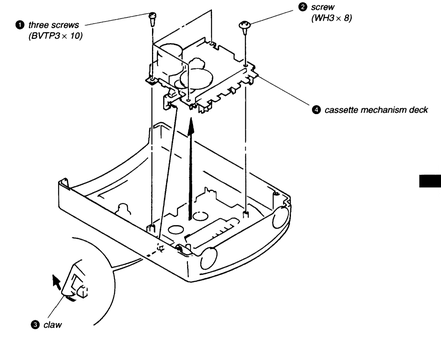
MAIN BOARD



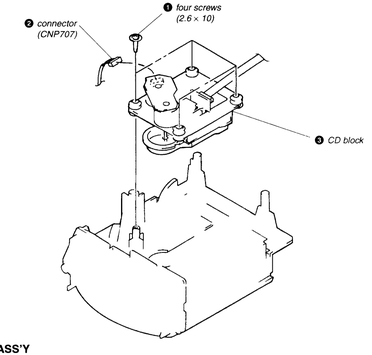
CONTROL/CD MAIN BOARD


❼ connector (CNP703)
❹ four screws (BVTP3 × 10)
❺ CD MAIN board
❶ flat wire (16 core) (CNP801)
❻ parallel wire (14 core) (CNP701)
❷ four screws (BVTP3 × 10)
❸ CONTROL board

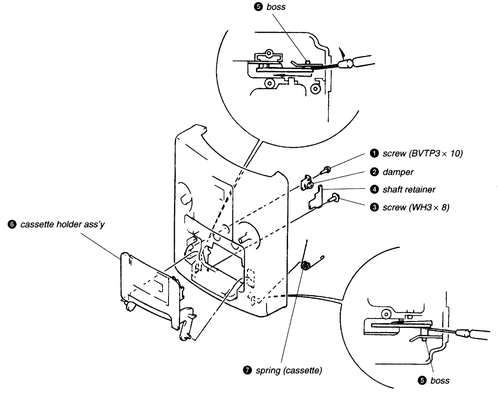
CASSETTE MECHANISM DECK



CD BLOCK

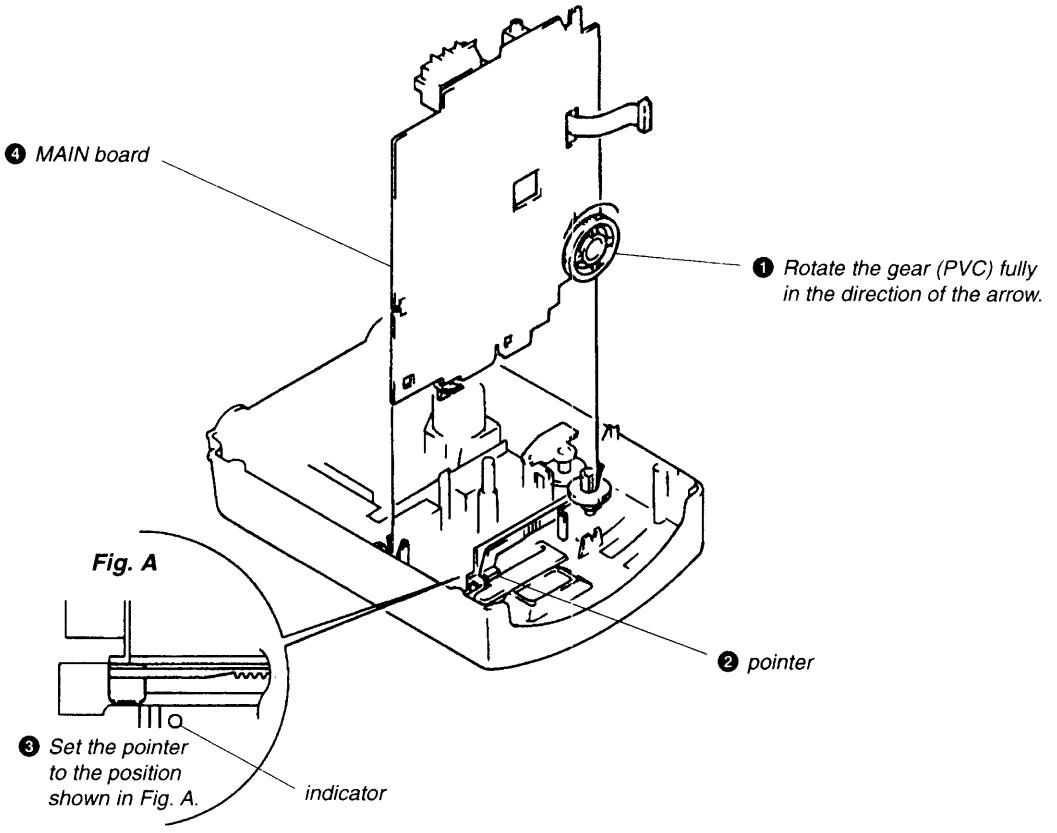


CASSETTE HOLDER ASS'Y



DIAL POINTER SETTING

Note: Follow the assembly procedure in the numerical order given.


❹ MAIN board
❶ Rotate the gear (PVC) fully in the direction of the arrow.
❷ pointer
Fig. A
❸ Set the pointer to the position shown in Fig. A.
indicator

SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head, erase head, capstan, pinch roller, rubber belts
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	27-70 g•cm (0.38-0.97 oz•inch)
FWD Back tension		1.5-5.5 g•cm (0.021-0.07 oz•inch)
FF	CQ-201B	55-130 g•cm (0.77-1.80 oz•inch)
REW	CQ-201B	55-130 g•cm (0.77-1.80 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 100 g (3.53 oz)

4-2. ELECTRICAL ADJUSTMENTS

TAPE DECK SECTION

Standard Output Level

	SP OUT	HP OUT
Load impedance	3.2Ω	32Ω
Output level	0.775 V (0 dB)	0.25 V (–10 dB)

Test Tape

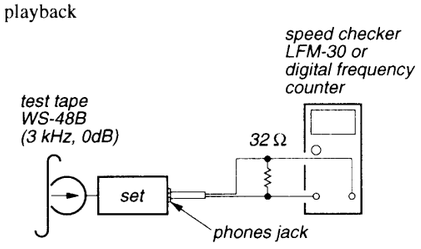
Type	Signal	Used for
WS-48B	3 kHz, 0 dB	Tape speed adjustment

0 dB=0.775 V

Tape Speed Adjustment

Procedure:

Mode: playback

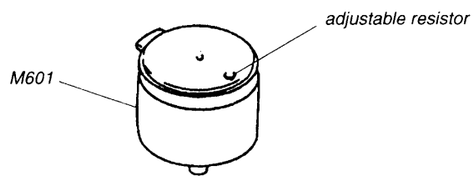


Adjustment Values:

Speed checker	Digital frequency counter
–1% to +1%	2,970 to 3,030 Hz

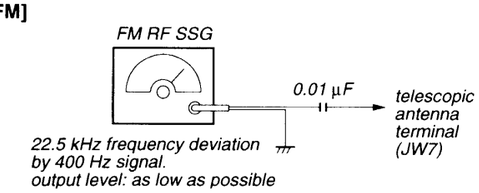
Frequency difference between the beginning and the end of the tape should be within 1% (30 Hz).

Adjustment Location:

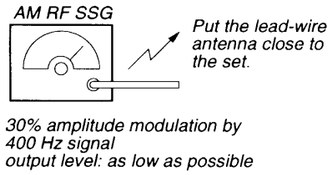


TUNER SECTION

[FM]



[AM]



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

( ): AEP (( )): East European

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	86.5 MHz (87.0 MHz) ((64 MHz))
CT2	109.5 MHz (108.3 MHz)

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	86.5 MHz (87.0 MHz) ((64 MHz))
CT1	109.5 MHz (108.3 MHz)

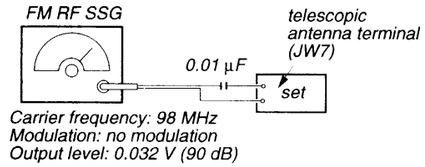
AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CFT1	455 kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	520 kHz
CT4	1780 kHz (1680 kHz) ((1680 kHz))

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	620 kHz
CT3	1400 kHz

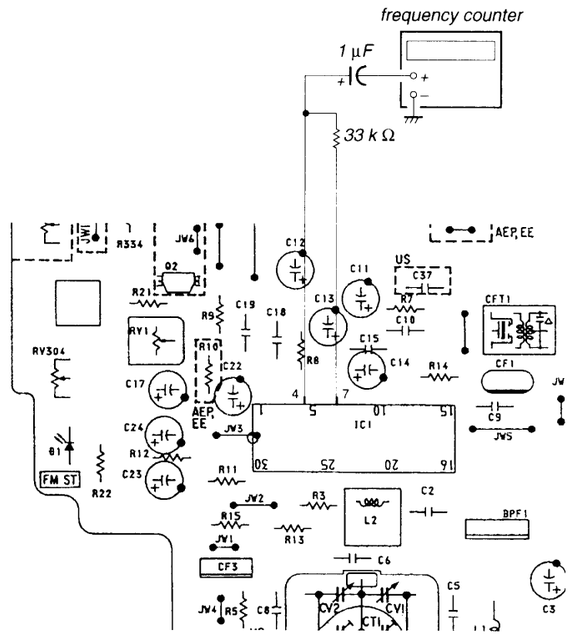
VCO Adjustment

Procedure:



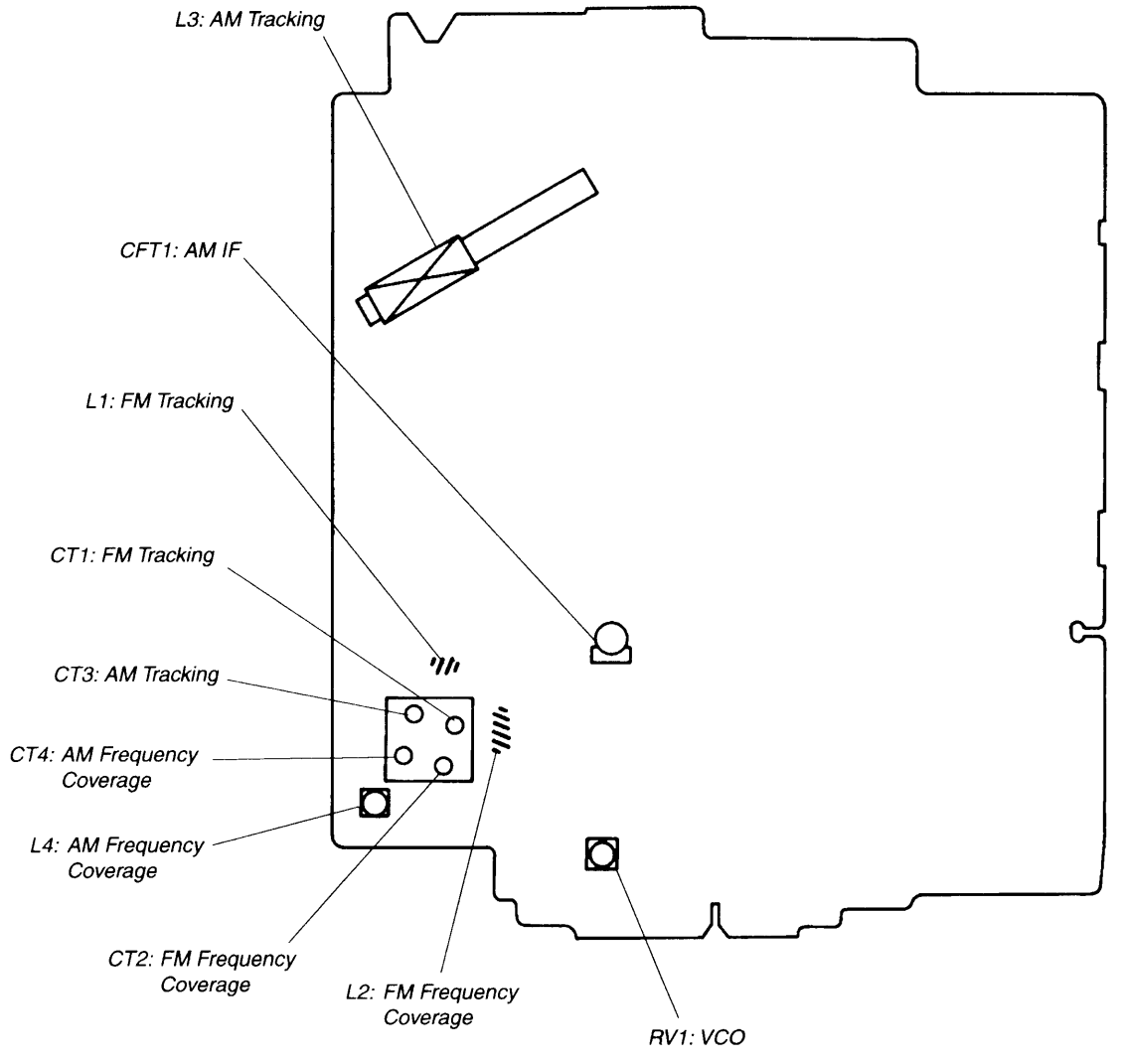
1. Connect frequency counter to ④ and ⑦ pins of IC1 as shown the figure below.
2. Tune the set to 98 MHz.
3. Adjust RV1 for 76 kHz ± 500 Hz reading on the frequency counter.

[MAIN BOARD] (Conductor Side)



Adjustment Location:

[MAIN BOARD] (Component Side)



CD SECTION

Notes on Adjustment

1. Perform adjustment in test mode.
   After adjustments, be sure to release test mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18. Part No. 3-702-101-01) only when so indicated.

Before Adjustment

Put the set into test mode and perform the following checks. Repair if there are any problems.

• Sled Motor Check

1. Press ▶II button, then press ■ button.
2. Press ▶▶I, I◀◀ buttons and confirm that the optical pick-up moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.
   ▶▶I : Optical pick-up moves to the outer circumference
   I◀◀ : Optical pick-up moves to the inner circumference

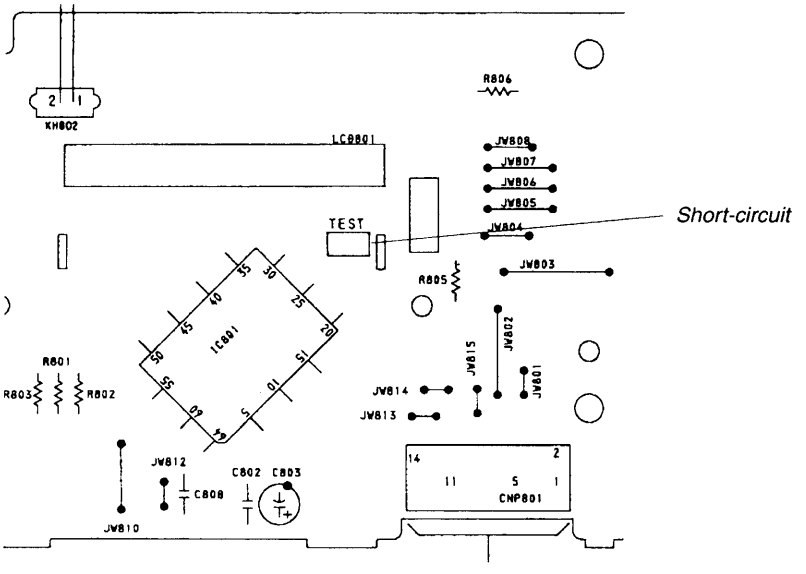
• Focus Search Check

1. Press ▶II button. (Focus serch operation is performed continuously.)
2. Look at the optical pick-up objective lens and confirm that it moves up and down smoothly, when no catching or abnormal noises.
3. Press ■ button.
   Confirm that focus search operation stops. If it does not , press ■ button again longer.

How to Put the Set into Test Mode

1. Short-circuit following portion on the CONTROL board.
2. Turn the FUNCTION selector to CD position.

[CONTROL BOARD] (Conductor Side)



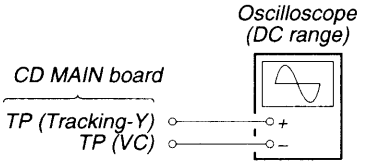
How to Release the Test Mode

1. Open the short-circuit to release test mode.

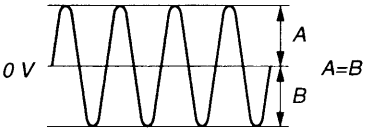
E-F Balance Adjustment

This adjustment is to be done when the optical pick-up block is replaced.

Procedure:



1. Put the set into test mode.
2. Connect oscilloscope between TP (TRACKING-Y) and TP (VC).
3. Press ▶▶I and I◀◀ buttons to move the optical pick-up to the center.
4. Insert disc (YEDS-18) in and press ▶II button.
5. Adjust RV703 so that the oscilloscope traverse waveform is symmetrical, as shown in the figure below.
6. Release test mode after adjustment is completed.



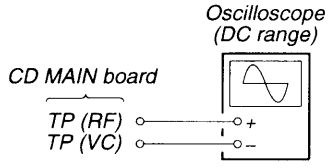
Adjustment value: 0.5 ± 0.2 Vp-p (A + B)

Adjustment Location: CD MAIN board (See page 24.)

Focus Bias Adjustment

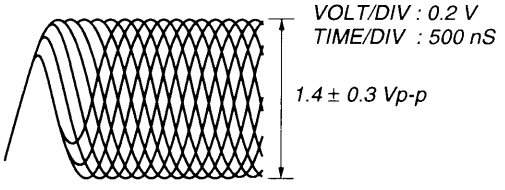
This adjustment is to be done when the optical pick-up block is replaced.

Procedure:



1. Put the set into test mode.
2. Connect oscilloscope between TP (RF) and TP (VC).
3. Press ▶▶I and I◀◀ buttons to move the optical pick-up to the center. (Move the optical pick-up to the music area on the disc to enable easy visibility of the eye pattern.)
4. Insert disc (YEDS-18) in and press ▶II button.
5. Press the ▶II button. (Tracking Servo ON)
6. Adjust RV701 so that the oscilloscope waveform is as shown in the figure below. (eye pattern)
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.
7. Release test mode after adjustment is completed.

• RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Adjustment Location: CD MAIN board (See page 24.)

REFERENCE

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.

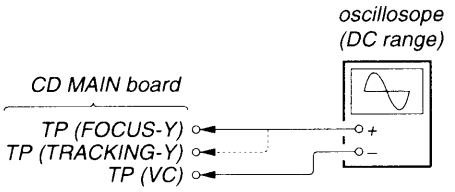
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Gain / Symptoms	Focus	Tracking
• The time until music starts becomes longer for ■→▶II on automatic selection. (I◀◀, ▶▶I buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for ■→▶II or automatic selection. (I◀◀, ▶▶I buttons pressed.)	–	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

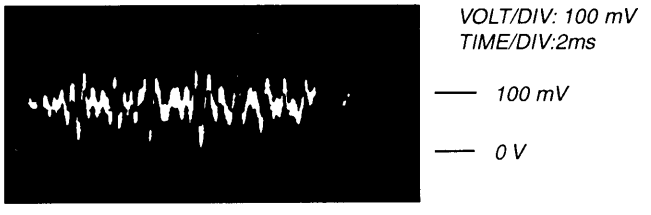
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the primary adjustment are only a little different, return the controls to the original position.



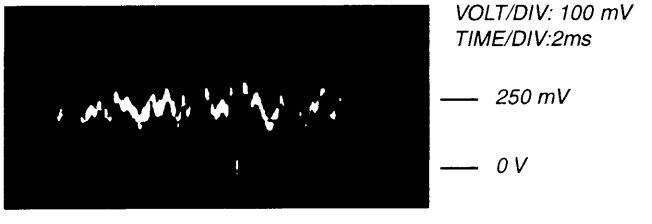
Procedure:

1. Keep the set horizontal.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Put the set into test mode.
3. Connect oscilloscope to TP (FOCUS-Y) and TP (VC).
4. Insert disc (YEDS-18) in and press ▶II button.
5. Press the ▶II button. (Tracking Servo ON)
6. Adjust RV702 so that the waveform is as shown in the figure below. (Focus gain adjustment)

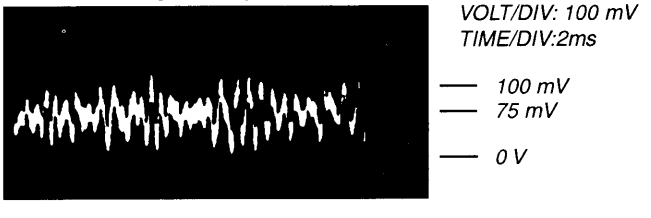


- Inconnect Examples (DC level changes more than on adjusted waveform)

low focus gain



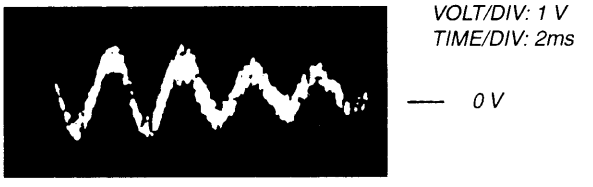
high focus gain



7. Connect oscilloscope to TP (TRACKING-Y) and TP (VC).
8. Adjust RV704 so that the waveform is as shown in the figure below. (tracking gain adjustment)
9. Release test mode after adjustment is completed.

- Incorrect Examples (fundamental wave appears)

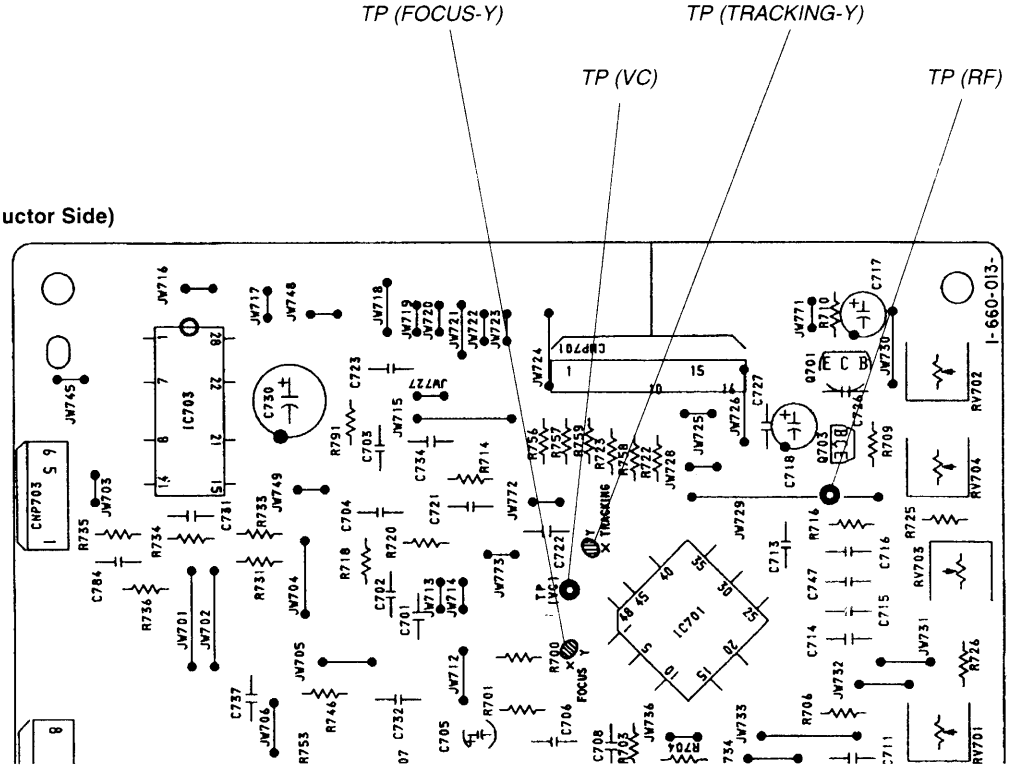
low tracking gain



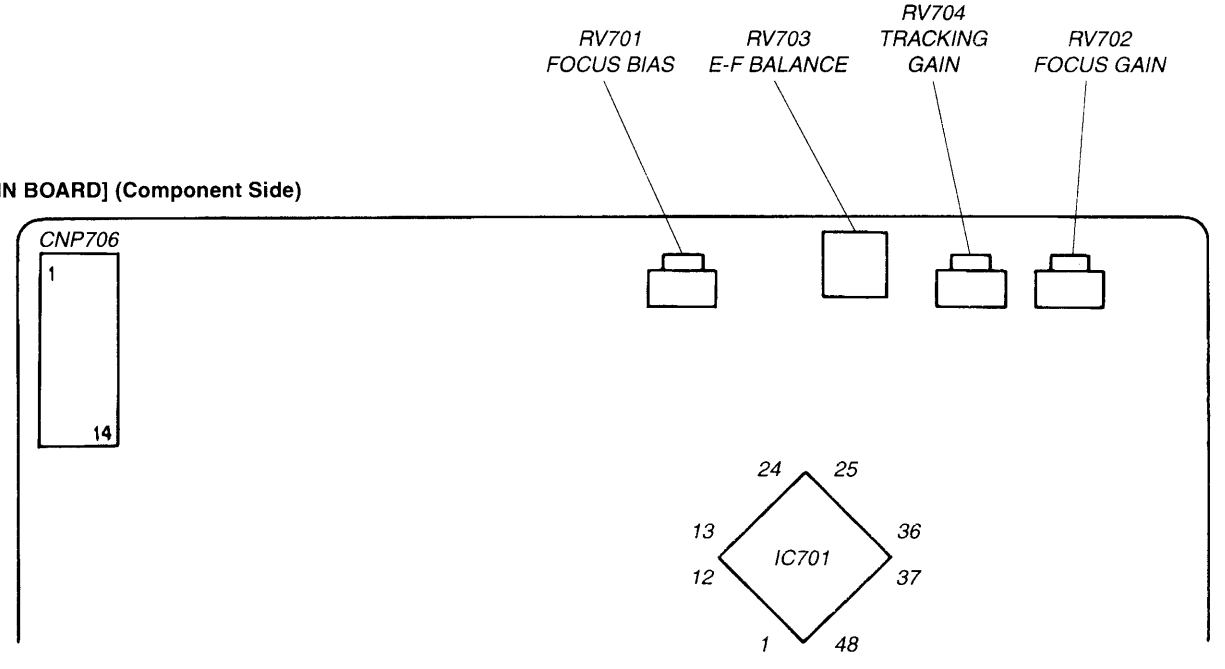
high tracking gain
(high fandamental wave than for low gain)

Adjustment Location:

[CD MAIN BOARD] (Conductor Side)



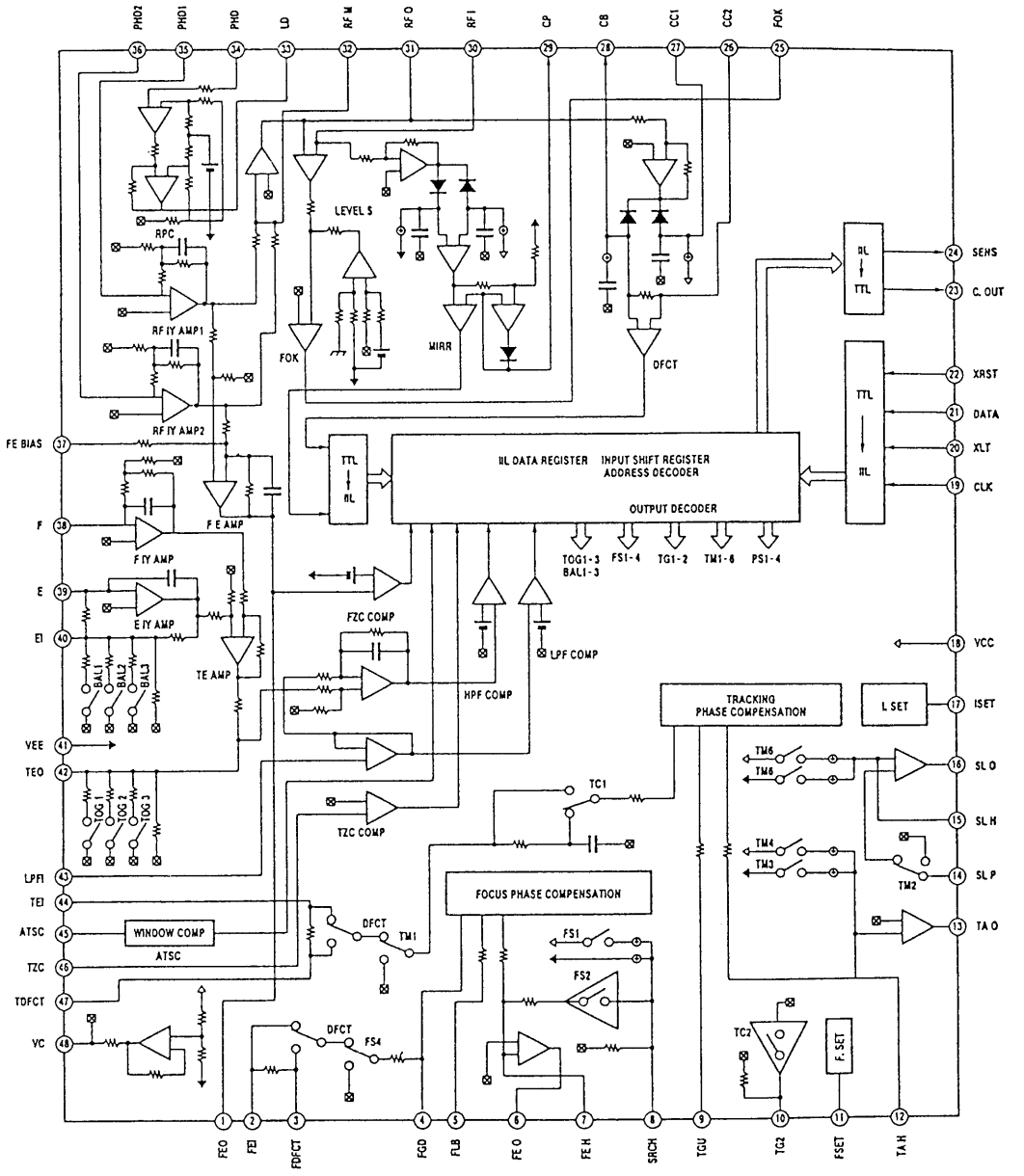
[CD MAIN BOARD] (Component Side)



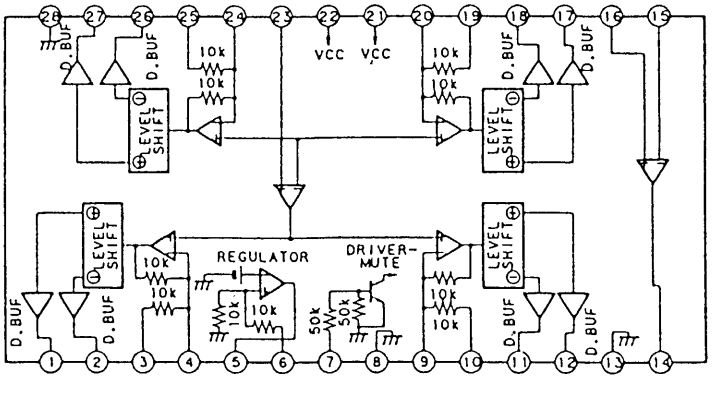
SECTION 5
DIAGRAMS

• IC Block Diagrams

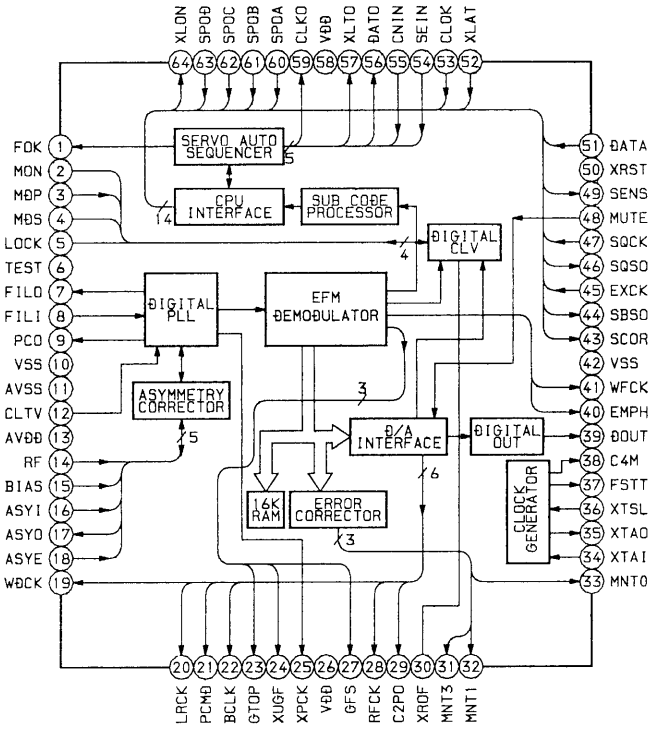
IC701 CXA1782BQ



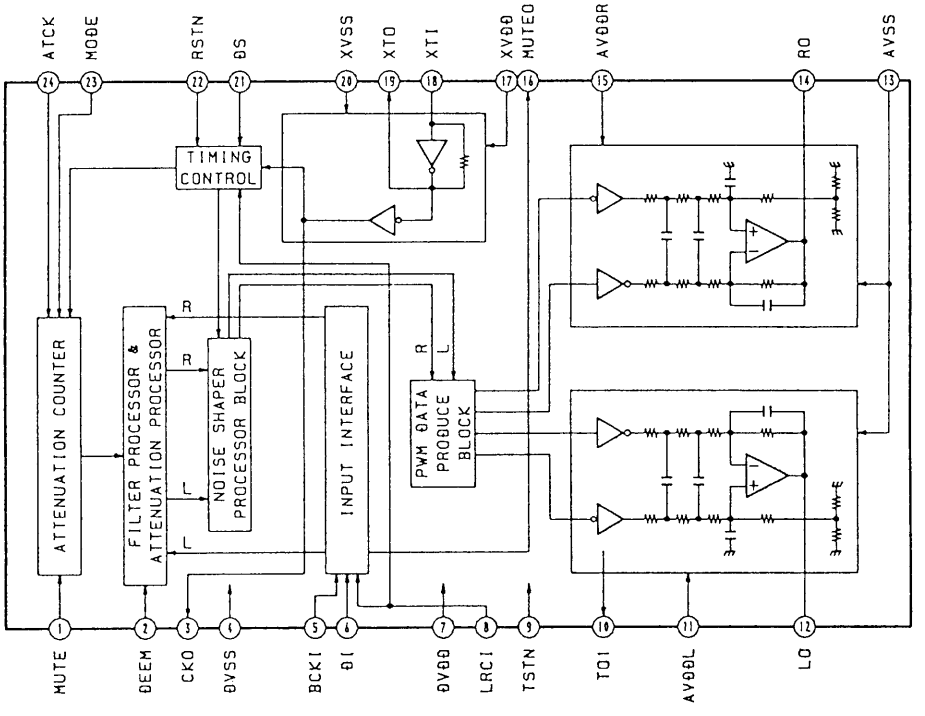
IC703 BA5930FP



IC702 CXD2507AQ



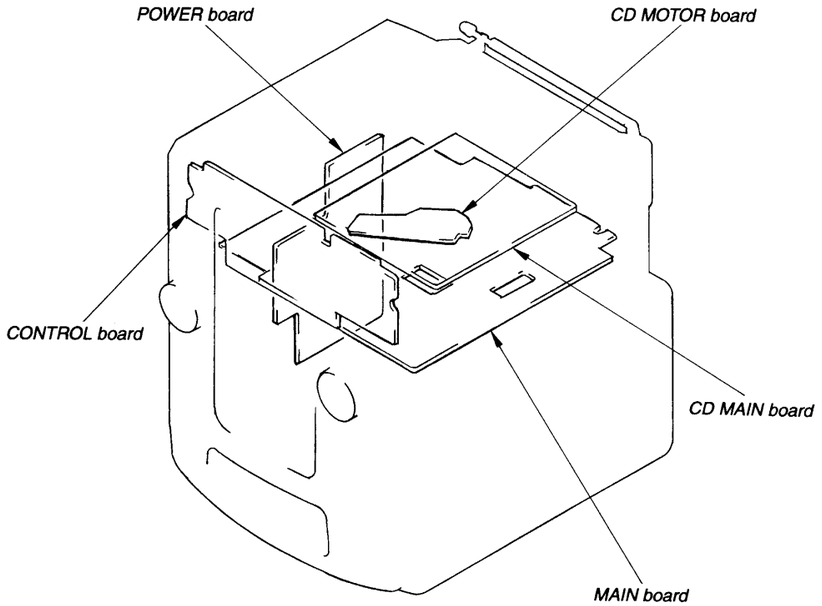
IC704 SM5877AM


ATCK MODE RSTN DS XVSS XTO XTI XVDD MUTEO AVDDR RO AVSS
24 23 22 21 20 19 18 17 16 15 14 13
TIMING CONTROL
ATTENUATION COUNTER
FILTER PROCESSOR & ATTENUATION PROCESSOR
NOISE SHAPER PROCESSOR BLOCK
INPUT INTERFACE
PWM DATA PRODUCE BLOCK
R
L
1 2 3 4 5 6 7 8 9 10 11 12
MUTE DEEM CKO DVSS BCKI DI DVDD LRCI TSTN TOI AVDDL LO

• Semiconductor Location

Ref. No.	Location
IC701	G-4
IC702	G-2
IC703	E-5
IC704	E-2
IC801	C-4
IC802	C-3
Q701	H-5
Q703	H-5

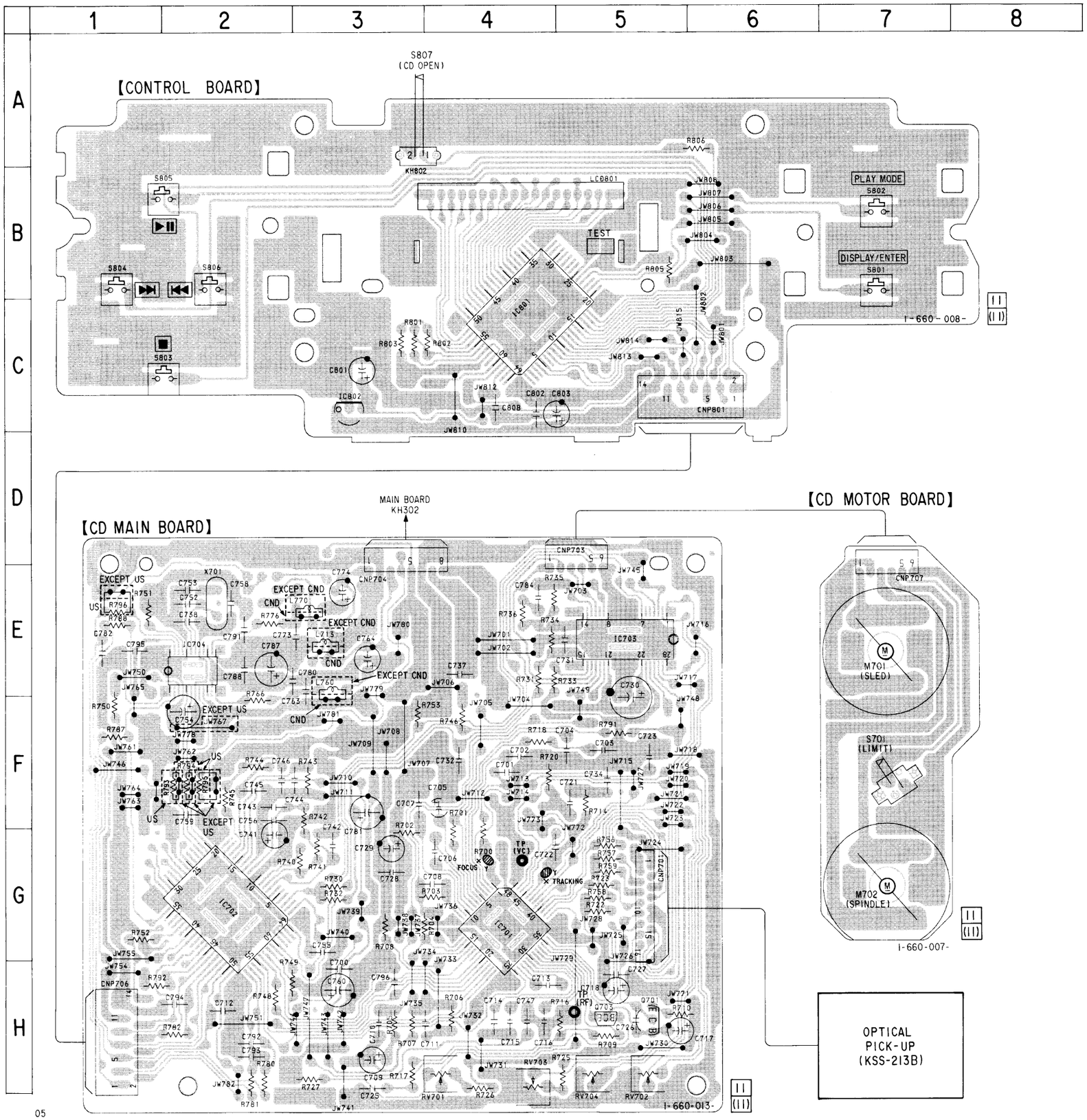
• Circuit Boards Location



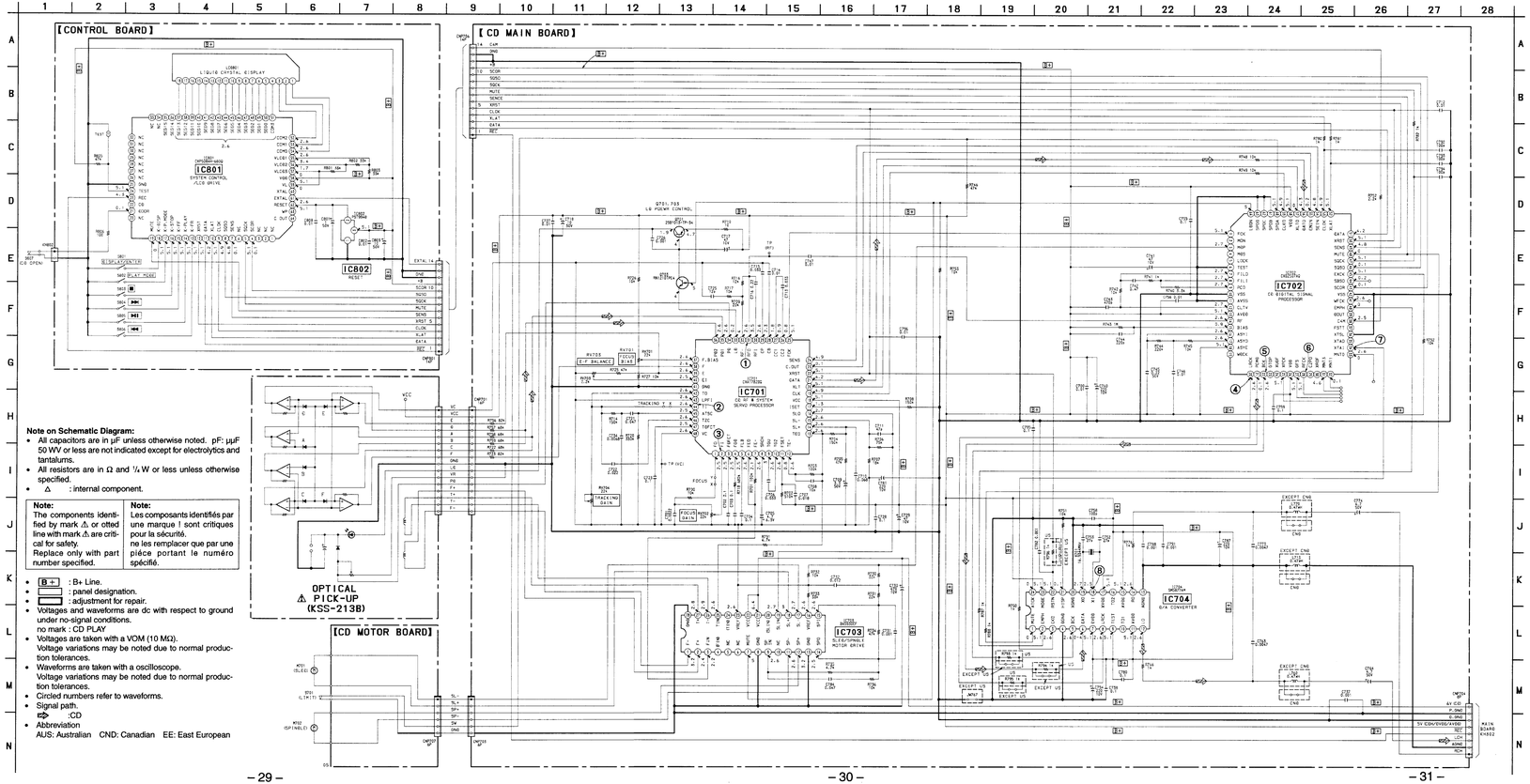
Note on Printed Wiring Boards:

- ——— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ :Pattern from the side which enables seeing.
- Abbreviation
  AUS: Australian
  CND: Canadian
  EE: East European

5-1. PRINTED WIRING BOARDS – CD Section –



05



Note on Schematic Diagram:

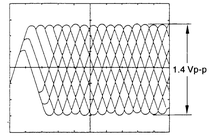
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.

Note:	Note:
The components identified by mark ⚠ or otted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ! sont critiques pour la sécurité. ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- : panel designation.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
- Voltages are taken with a VOM (10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ :CD
- Abbreviation
  AUS: Australian CND: Canadian EE: East European

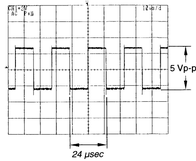
• Waveforms

❶ IC101 ⑮

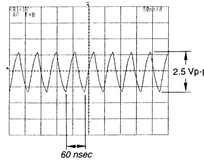


Note: This waveform is measured between RFO and VC.

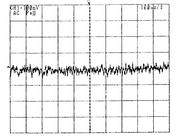
❹ IC702 ㉙



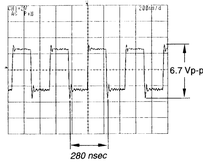
❼ IC702 ㉔



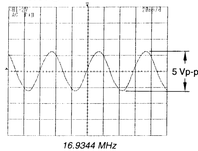
❷ IC701 ⑭ *Approx. 50 mVp-p*



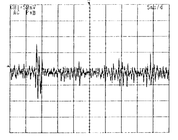
❺ IC702 ㉒



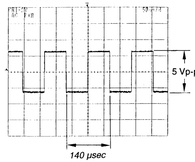
❸ IC704 ⑯



❸ IC701 ② *Approx. 50 mVp-p*

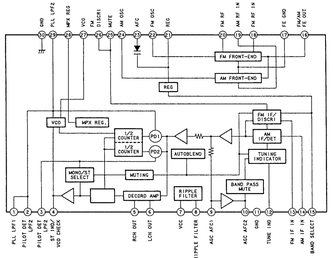


❻ IC702 ㉚

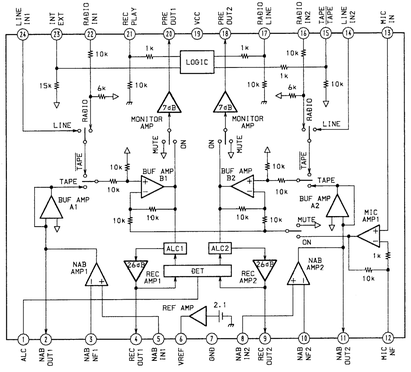


• IC Block Diagrams

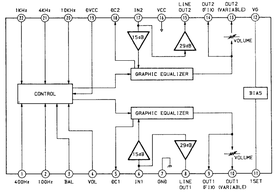
IC1 CXA1238S



IC303 CXA1352AS



IC301 TA2068N



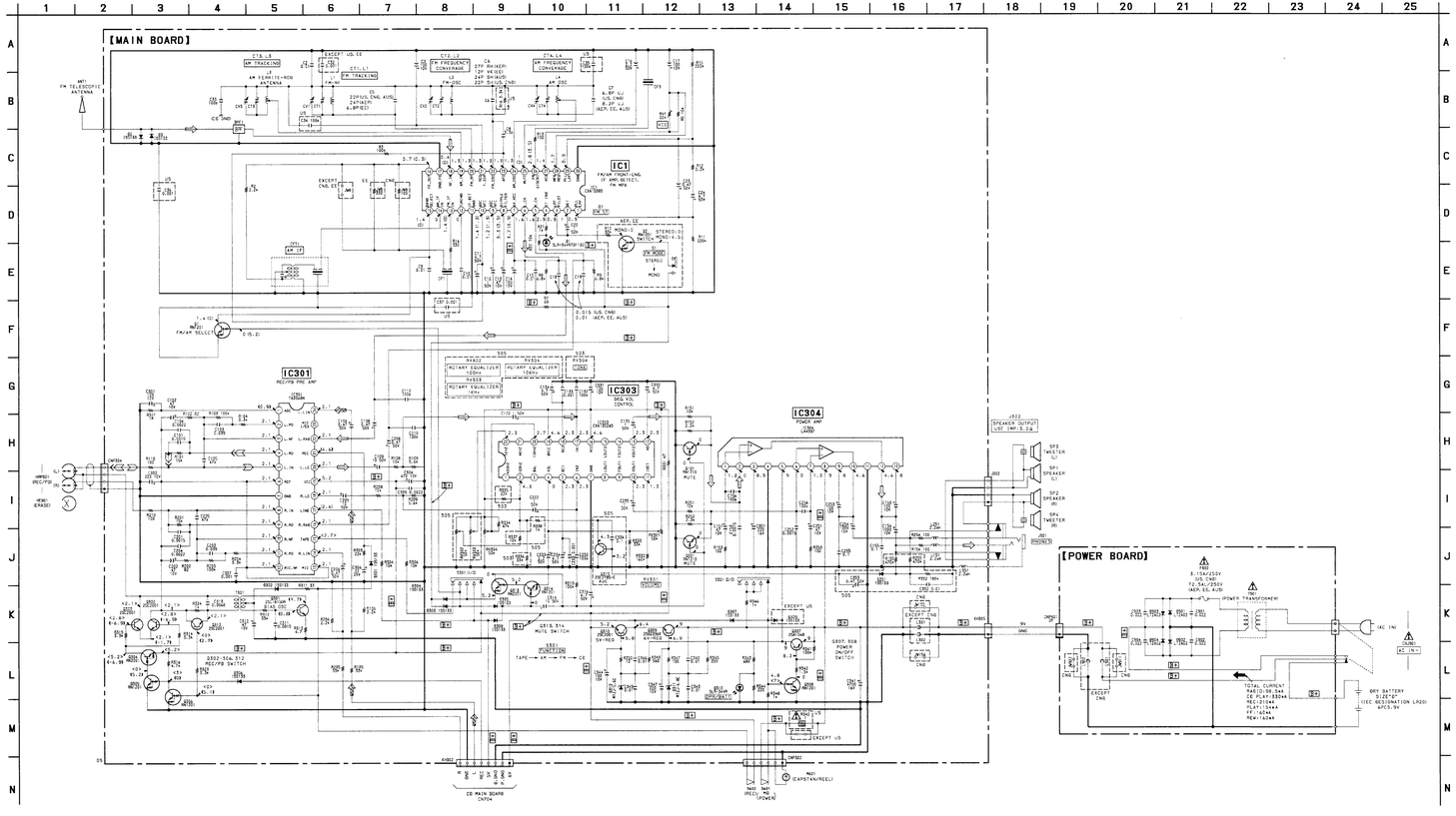
Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.

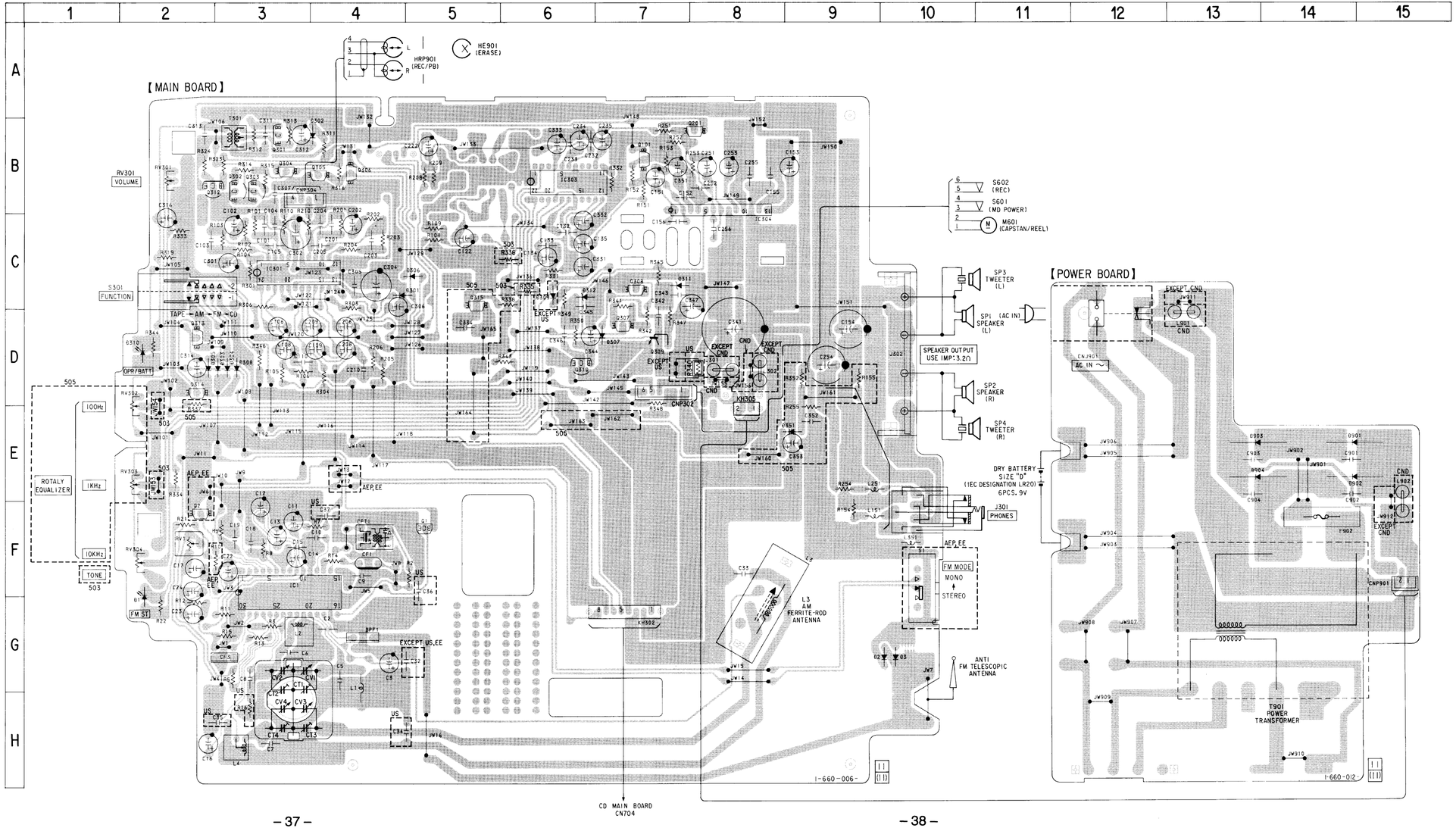
Note:	**Note:**
The components identified by mark /!\ or otted line with mark /!\ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ! sont critiques pour la sécurité. ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages and are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
  [ ] : CD
  < > : Play back
  << >> : Record
- Voltages are taken with a VOM (10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB
  ⇨ : REC
  ⇨ : CD
- Abbreviation
  AUS: Australian
  CND: Canadian
  EE: East European

5-3. SCHEMATIC DIAGRAM – AUDIO Section –



5-4. PRINTED WIRING BOARDS – AUDIO Section – • See page 27 for Circuit Board Location.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	G-2	Q1	F-5
D2	G-10	Q2	F-2
D3	G-10	Q101	B-7
D301	C-5	Q201	B-8
D302	B-4	Q301	B-3
D303	D-3	Q302	B-3
D304	D-3	Q303	B-3
D305	D-2	Q304	B-3
D306	C-5	Q305	B-4
D307	D-7	Q306	B-4
D308	D-3	Q307	D-7
D309	C-6	Q308	C-7
D310	D-2	Q309	D-7
D311	C-7	Q310	D-6
D312	C-6	Q312	B-2
D351	E-9	Q313	D-2
D901	E-15	Q314	D-2
D902	E-15	Q315	C-5
D903	E-13		
D904	E-13		
IC1	F-3		
IC301	C-3		
IC303	B-6		
IC304	C-8		

Note on Printed Wiring Boards:

- ——— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.
- Abbreviation
  AUS: Australian
  CND: Canadian
  EE: East European

5-5. IC PIN FUNCTION DESCRIPTION

CONTROL BOARD IC801 CXP5084H-680Q (SYSTEM CONTROL, LCD DRIVE)

Pin No.	Pin Name	I/O	Function
1	NC	–	Not used
2	NC	–	Not used
3	NC	–	Not used
4	SCOR	I	SCOR input
5	SQCK	O	SQCK output
6	NC	–	Not used
7	SENS	I	SENS input
8	SQSO	I	Sub Q data input
9	CLOCK	O	Clock output
10	XLAT	O	Latch output
11	DATA	O	Data output
12	XRST	O	Reset output
13	K-FR	I	FR AMS (search) key input
14	K-PLAY	I	Play key input
15	K-FF	I	FF AMS (search) key input
16	K-STOP	I	Stop key input
17	K-P.MODE	I	Play Mode key input
18	K-DISP	I	Display key input
19	MUTE	O	Mute output "H": Mute
20	NC	–	Not used
21	DOOR	I	Open/close detection input "L": close "H": open
22	CD	–	Not used
23	REC	I	Tape REC input "L": REC
24	TEST	I	Wiring to test mode
25	GND	–	GND
26	NC	–	Not used
27	NC	–	Not used
28	NC	–	Not used
29	NC	–	Not used
30	NC	–	Not used
31	NC	–	Not used
32	NC	–	Not used
33	NC	–	Not used
34	NC	–	Not used
35	SEG15	–	LCD segment output (Not used)
36	SEG14	–	LCD segment output (Not used)
37	SEG13	O	LCD segment output
38	SEG12	O	LCD segment output
39	SEG11	O	LCD segment output
40	SEG10	O	LCD segment output
41	SEG9	O	LCD segment output
42	SEG8	O	LCD segment output
43	SEG7	O	LCD segment output

Pin No.	Pin Name	I/O	Function
44	SEG6	O	LCD segment output
45	SEG5	O	LCD segment output
46	SEG4	O	LCD segment output
47	SEG3	O	LCD segment output
48	SEG2	O	LCD segment output
49	SEG1	O	LCD segment output
50	SEG0	O	LCD segment output
51	COM3	O	LCD comon output
52	COM2	O	LCD comon output
53	COM1	O	LCD comon output
54	COM0	O	LCD comon output
55	VLCD1	–	LCD controller driver bias power supply
56	VLCD2	–	LCD controller driver bias power supply
57	VLCD3	–	LCD controller driver bias power supply
58	VDD	–	Power supply
59	VL	–	Connect to pin 57
60	XTAL	–	Clock oscillation output (Not used)
61	EXTAL	I	Clock oscillation input
62	RESET	I	Reset input
63	WP	–	Not used
64	C OUT	–	Not used

SECTION 6
EXPLODED VIEWS

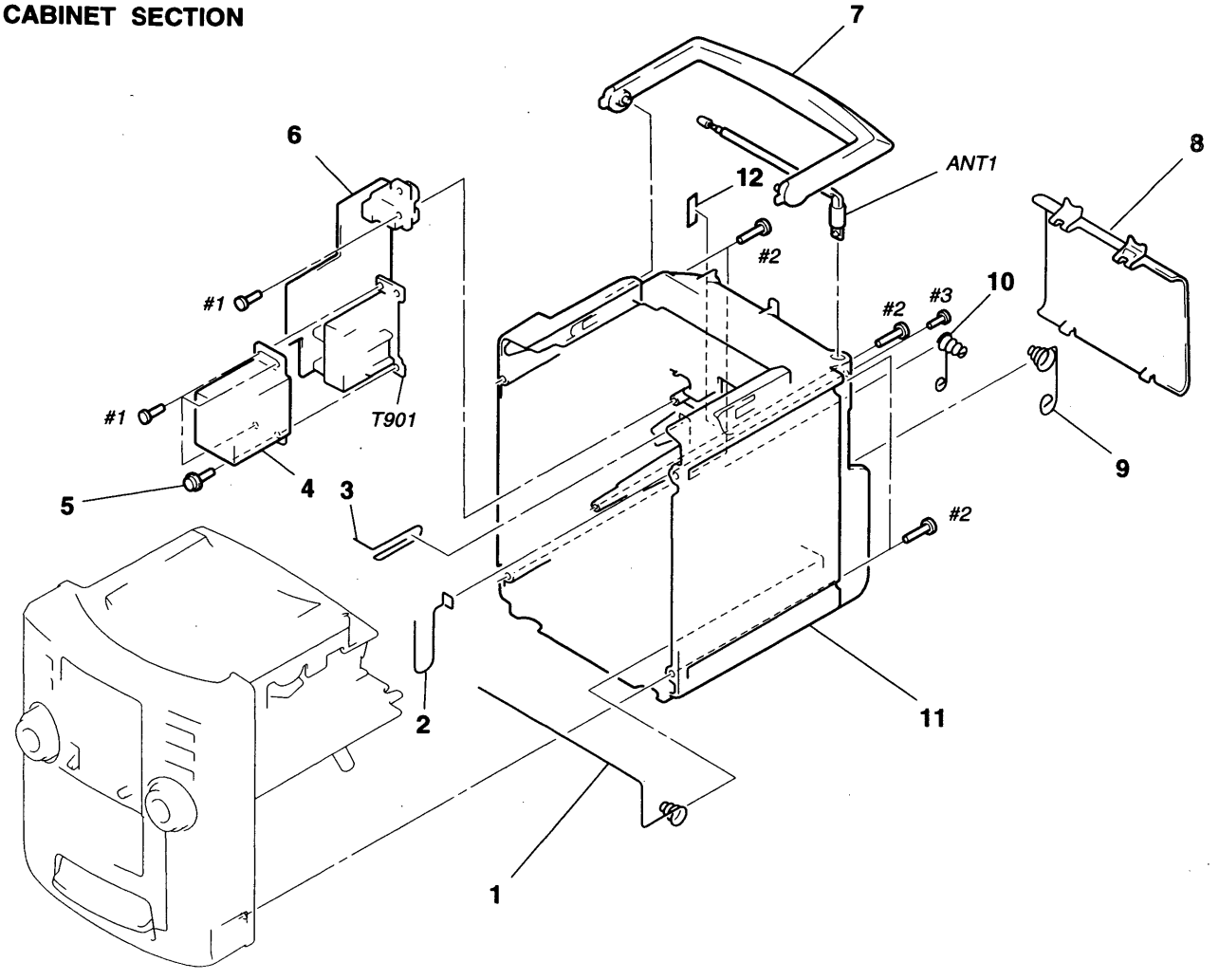
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  AUS: Australian CND: Canadian EE: East European
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

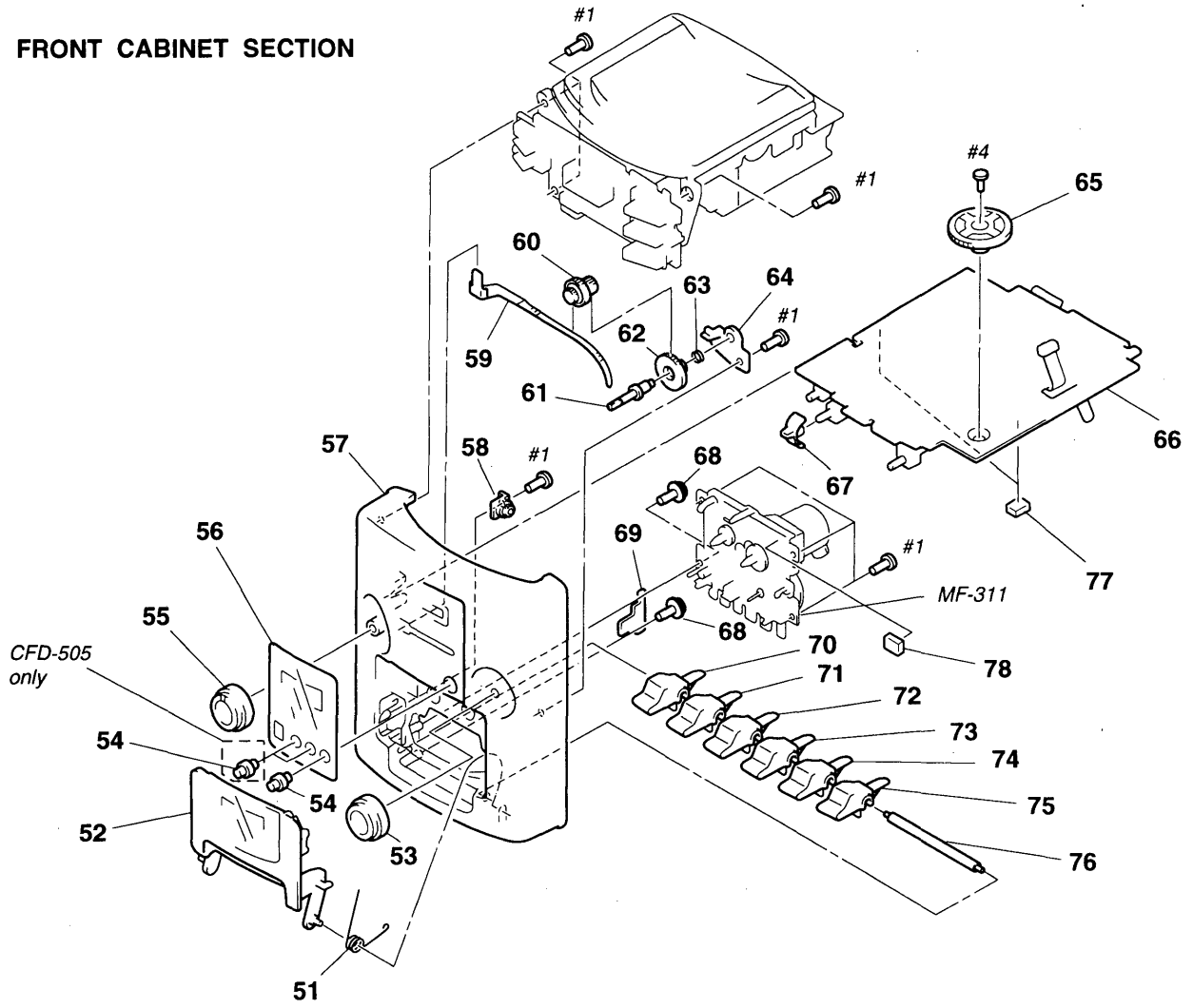
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

(1) CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-933-221-01	SPRING (-)	
2	3-933-223-01	TERMINAL, ANTENNA	
3	3-933-220-01	SPRING (+)	
* 4	3-933-224-01	PLATE (TRANS), SHIELD	
5	4-960-167-01	SCREW (3X8)(DIA.10), +WH	
* 6	A-3305-641-A	POWER BOARD, COMPLETE (US)	
* 6	A-3305-742-A	POWER BOARD, COMPLETE (CND)	
* 6	A-3305-800-A	POWER BOARD, COMPLETE (AEP, EE, AUS)	
7	3-933-218-01	HANDLE	
8	3-933-193-01	LID, BATTERY CASE	
9	3-933-225-01	SPRING (+-.B)	
10	3-933-222-01	SPRING (+-.A)	
11	3-933-214-01	CABINET (REAR)(503/505:US, CND, AUS)	
11	3-933-214-11	CABINET (REAR)(AEP, EE)	
* 12	4-941-548-01	LABEL, CLASS (1) (AEP, EE)	
ANT1	1-501-362-11	ANTENNA, TELESCOPIC (FM)	
⚠T901	1-429-473-11	TRANSFORMER, POWER (US, CND)	
⚠T901	1-429-513-11	TRANSFORMER, POWER (AEP, EE, AUS)	

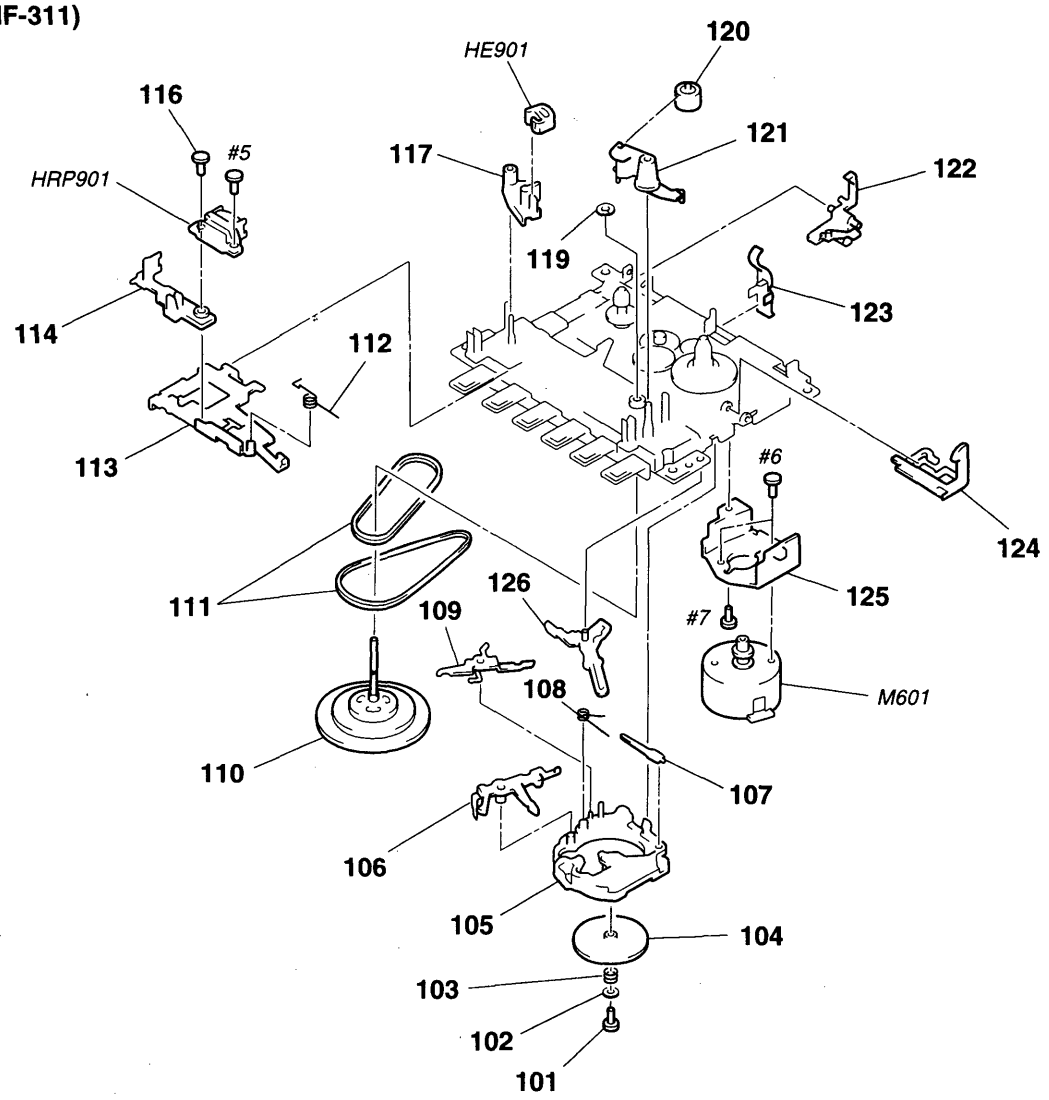
(2) FRONT CABINET SECTION



Ref. No.	Part No.	Description	Remark
51	3-933-212-01	SPRING (CASSETTE)	
52	A-3304-344-A	HOLDER ASSY, CASSETTE (503)	
52	A-3304-367-A	HOLDER ASSY, CASSETTE (505)	
53	3-933-194-01	KNOB (TUNE)	
54	3-933-196-01	KNOB (EQ)	
55	3-933-195-01	KNOB (VOL)	
56	3-933-209-01	WINDOW (LCD)(503)	
56	3-933-209-11	WINDOW (LCD)(505:CND,US)	
56	3-933-209-21	WINDOW (LCD)(AEP)	
56	3-933-209-41	WINDOW (LCD)(EE)	
56	3-933-209-51	WINDOW (LCD)(AUS)	
57	3-933-200-01	CABINET (FRONT)	
58	3-351-377-01	DAMPER	
59	3-933-192-01	POINTER	
60	3-933-190-01	GEAR (POINTER)	
61	3-933-191-01	SHAFT (TUNE)	
62	3-933-189-01	GEAR (TUNE)	
63	3-933-199-01	SPRING (TUNE)	
64	3-933-198-01	BRACKET (TUNE)	
65	3-933-207-01	GEAR (PVC)	

Ref. No.	Part No.	Description	Remark
* 66	A-3305-637-A	MAIN BOARD, COMPLETE (503:US)	
* 66	A-3305-667-A	MAIN BOARD, COMPLETE (505:US)	
* 66	A-3305-740-A	MAIN BOARD, COMPLETE (505:CND)	
* 66	A-3305-741-A	MAIN BOARD, COMPLETE (503:CND)	
* 66	A-3305-799-A	MAIN BOARD, COMPLETE (AEP)	
* 66	A-3305-802-A	MAIN BOARD, COMPLETE (EE)	
* 66	A-3305-827-A	MAIN BOARD, COMPLETE (AUS)	
67	3-933-197-01	LEVER (FUNCTION)	
68	4-960-167-01	SCREW (3X8)(DIA.10), +WH	
69	1-660-011-11	PC BOARD, SHAFT RETAINER	
70	3-933-201-01	BUTTON (MD REC)(●)	
71	3-933-202-01	BUTTON (MD PLAY)(▶)	
72	3-933-203-01	BUTTON (MD REW)(◀◀)	
73	3-933-204-01	BUTTON (MD FF)(▶▶)	
74	3-933-205-01	BUTTON (MD STOP)(■/⏏)	
75	3-933-206-01	BUTTON (MD PAUSE)(❚❚)	
76	3-933-211-01	SHAFT (MD)	
77	3-937-247-01	SPACER (A)	
78	3-937-248-01	CUSHION (A)	

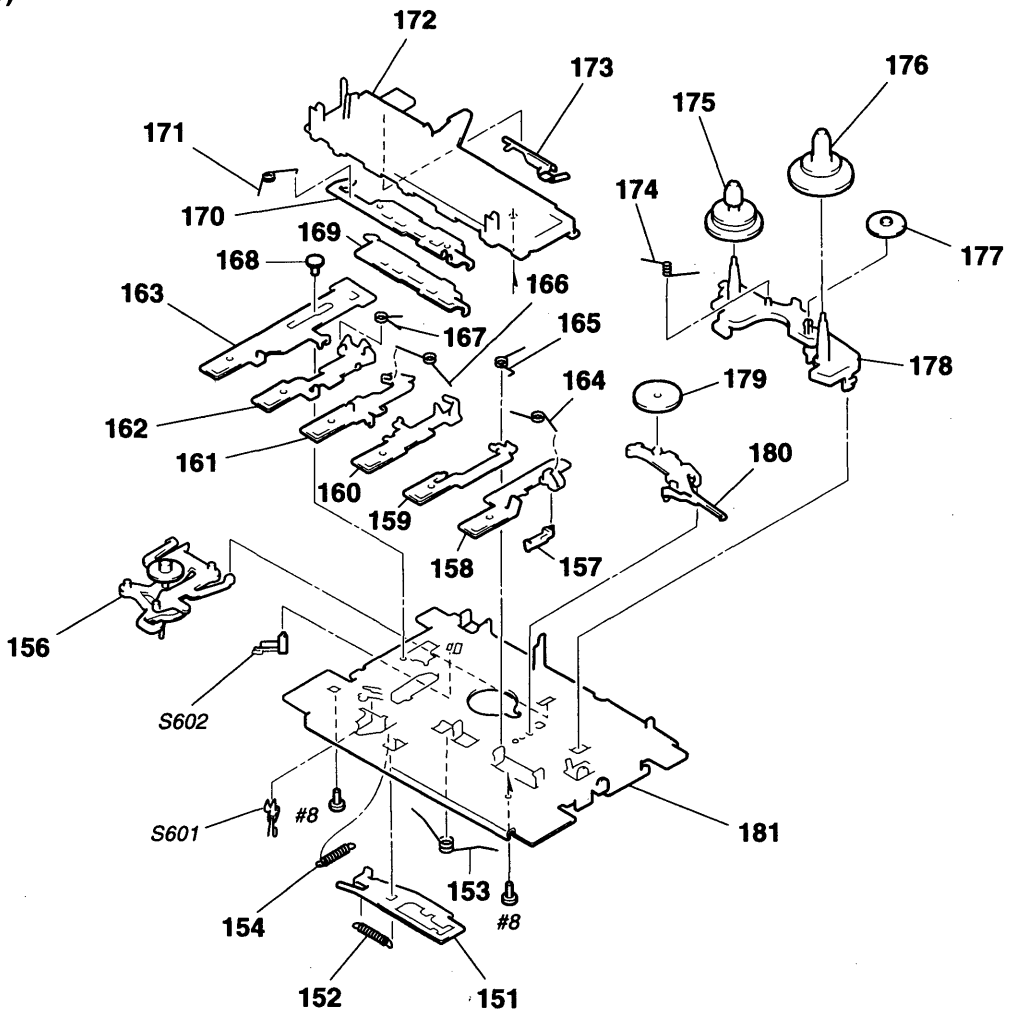
(3) MECHANISM DECK SECTION-1 (MF-311)



Ref. No.	Part No.	Description	Remark
101	3-366-352-01	SCREW	
102	3-369-961-01	WASHER	
103	3-369-962-01	SPRING, COMPRESSION	
104	X-3363-315-1	GEAR, CAM	
105	3-362-973-01	AS (BASE)	
106	3-362-975-01	LEVER, SENSOR	
107	3-362-978-01	SPRING, PLATE	
108	3-362-977-01	SPRING	
109	3-362-976-01	LEVER, CONTROL	
110	3-362-979-01	FW ASSY	
111	3-362-989-01	BELT	
112	3-362-983-01	SPRING	
113	3-382-407-01	BASE HEAD	
114	3-382-409-01	GUIDE TAPE AZ	

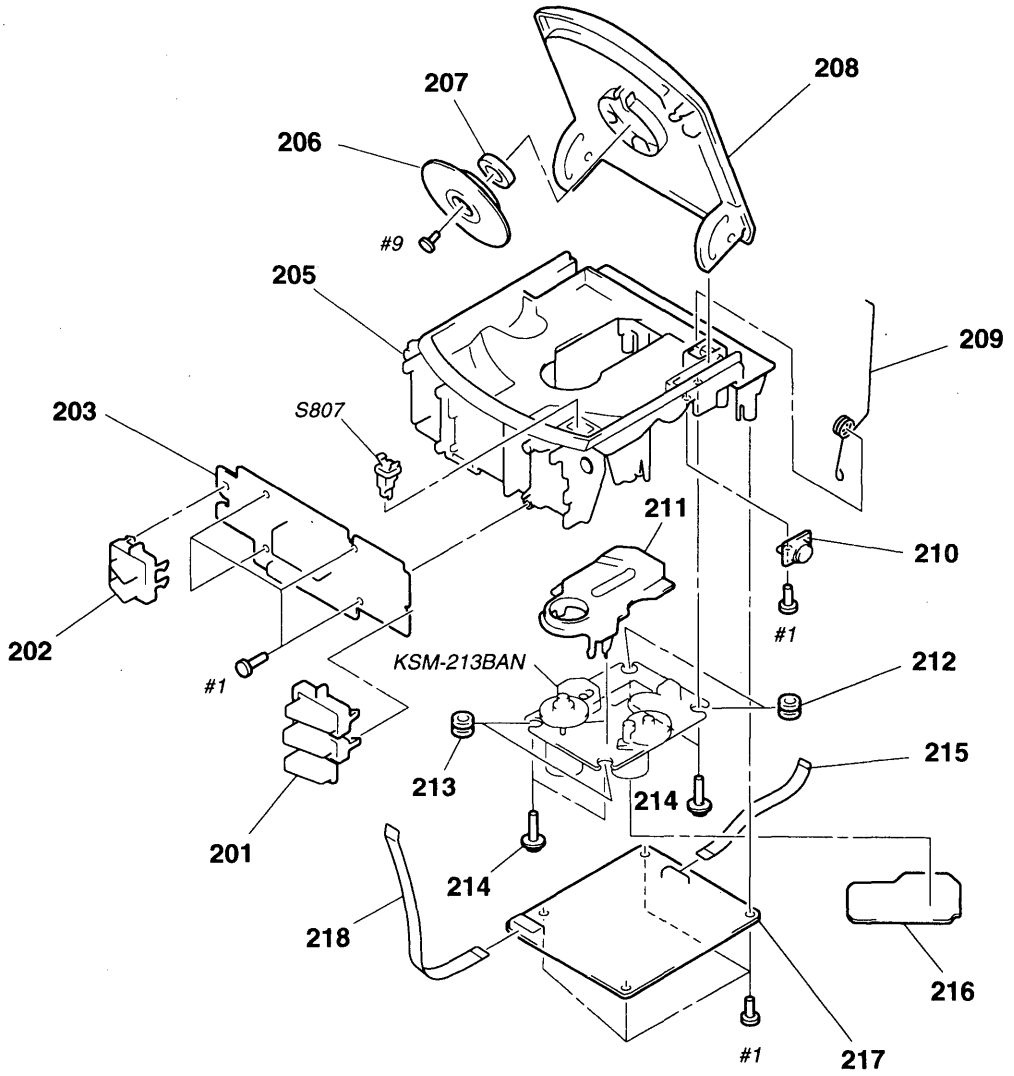
Ref. No.	Part No.	Description	Remark
116	3-382-408-01	SCREW	
117	3-362-987-01	ARM, EH	
119	3-362-980-01	WASHER	
120	3-362-982-01	PINCH ROLLER	
121	3-362-981-01	PINCH ARM	
122	3-362-966-01	INTER LOCK	
123	3-362-967-01	SPRING, CASSETTE	
124	3-362-968-01	LEVER, EJECT	
* 125	3-362-988-01	HOLDER, MOTOR	
126	3-387-697-01	SENSOR	
M601	X-3365-538-1	MOTOR ASSY (CAPSTAN/REEL)	
HE901	1-543-777-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-543-964-12	HEAD, MAGNETIC (RECORD/PLAYBACK)	

(4) MECHANISM DECK SECTION-2 (MF-311)



Ref. No.	Part No.	Description	Remark
151	3-379-844-01	PLATE, STOP, FR	
152	3-379-843-01	SPRING	
153	3-362-970-01	SPRING	
154	3-362-971-01	SPRING	
156	3-362-969-01	IDLER ASSY, PF	
157	3-362-953-01	ARM, PAUSE	
* 158	3-362-952-01	LEVER, PAUSE	
* 159	3-362-951-01	LEVER, SE	
* 160	3-362-950-01	LEVER, FF	
* 161	3-362-949-01	LEVER, REW	
* 162	3-362-948-01	LEVER, PLAY	
* 163	3-362-947-01	LEVER, REC	
164	3-362-957-01	SPRING	
165	3-362-956-01	SPRING	
166	3-362-955-01	SPRING	
167	3-362-954-01	SPRING	
168	3-362-958-01	SCREW	
* 169	3-362-946-01	LEVER, SW	
* 170	3-362-943-01	PLATE, FUNCTION	
171	3-362-945-01	SPRING	
172	3-362-942-01	FRAME ASSY	
173	3-362-944-01	STOPPER, REC	
174	3-917-805-01	SPRING	
175	X-3363-611-1	REEL, S	
176	3-362-962-01	REEL ASSY, T	
177	3-362-965-01	IDLER, FF	
178	3-362-961-01	SPINDLE (BASE)	
179	3-362-960-01	PULLEY, IDLER	
180	3-362-959-01	ARM, IDLER	
* 181	3-362-941-01	CHASSIS	
S601	1-571-556-11	SWITCH, LEAF (MD POWER)	
S602	1-571-556-11	SWITCH, LEAF (REC)	

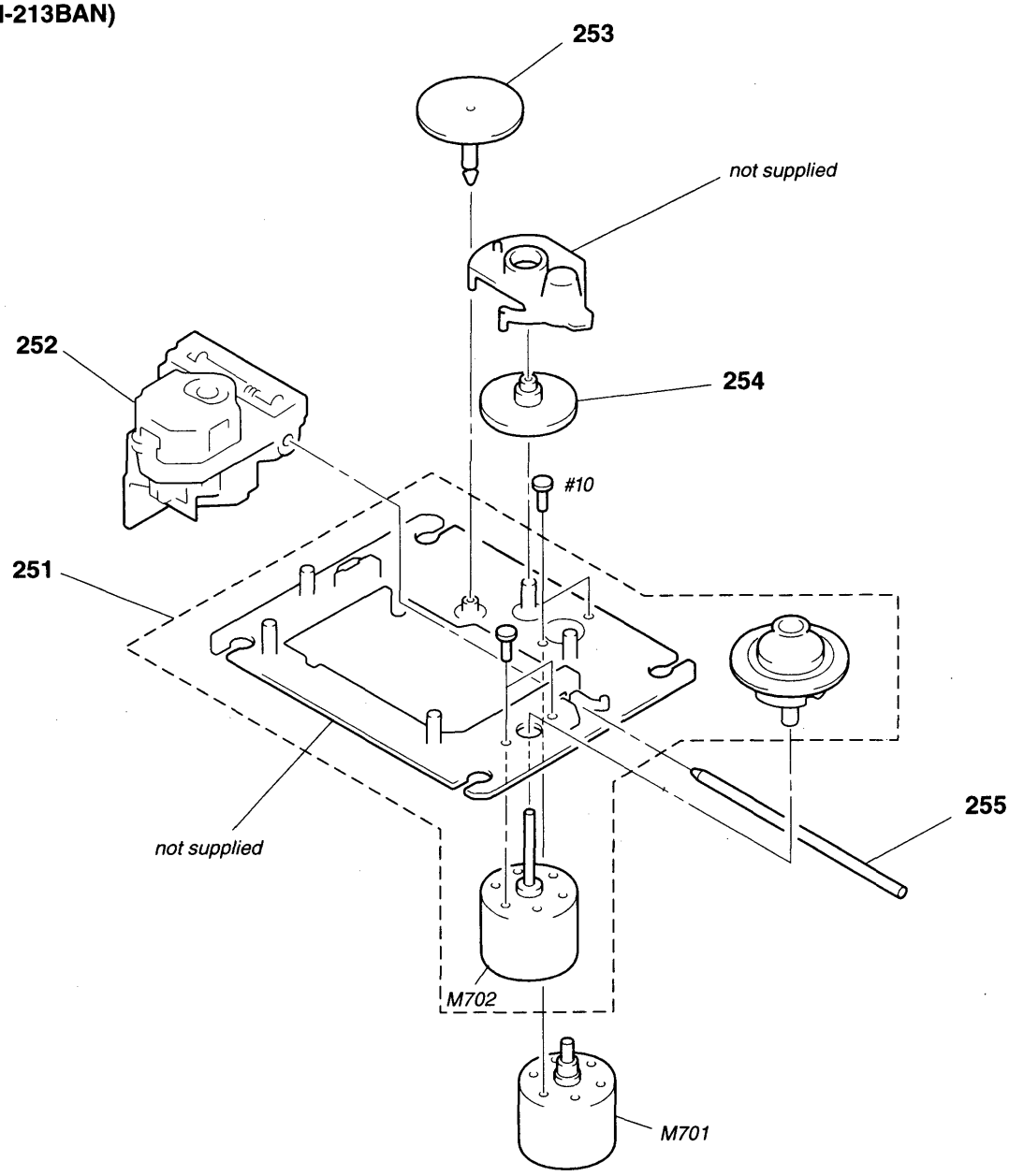
(5) CD BLOCK SECTION



Ref. No.	Part No.	Description	Remark
201	3-933-217-01	BUTTON (B)(▶II/I◀◀/▶▶I/■)	
202	3-933-216-01	BUTTON (A)	
* 203	A-3305-639-A	CONTROL BOARD, COMPLETE	
205	3-933-215-01	CABINET (UPPER)	
206	3-910-112-01	PLATE, CHUCKING	
207	1-452-732-11	MAGNET	
208	3-933-227-01	LID (CD)(503)	
208	3-933-227-11	LID (CD)(505)	
209	3-933-219-01	SPRING (CD)	
210	3-351-377-11	DAMPER	
211	3-910-116-01	COVER, CD	

Ref. No.	Part No.	Description	Remark
212	3-910-095-01	RUBBER, VIBRATION PROOF (RED)	
213	3-910-095-11	RUBBER, VIBRATION PROOF (GREEN)	
214	3-911-135-01	SCREW (2.6X10)	
215	1-776-512-11	WIRE, PARALLEL (FFC)(14 CORE)	
* 216	1-660-007-11	CD MOTOR BOARD	
* 217	A-3305-638-A	CD MAIN BOARD, COMPLETE (US)	
* 217	A-3305-743-A	CD MAIN BOARD, COMPLETE (CND)	
* 217	A-3305-801-A	CD MAIN BOARD, COMPLETE (AEP, EE, AUS)	
218	1-769-828-11	WIRE (FLAT TYPE)(16 CORE)	
S807	1-692-960-11	SWITCH, PUSH (1 KEY)(CD OPEN)	

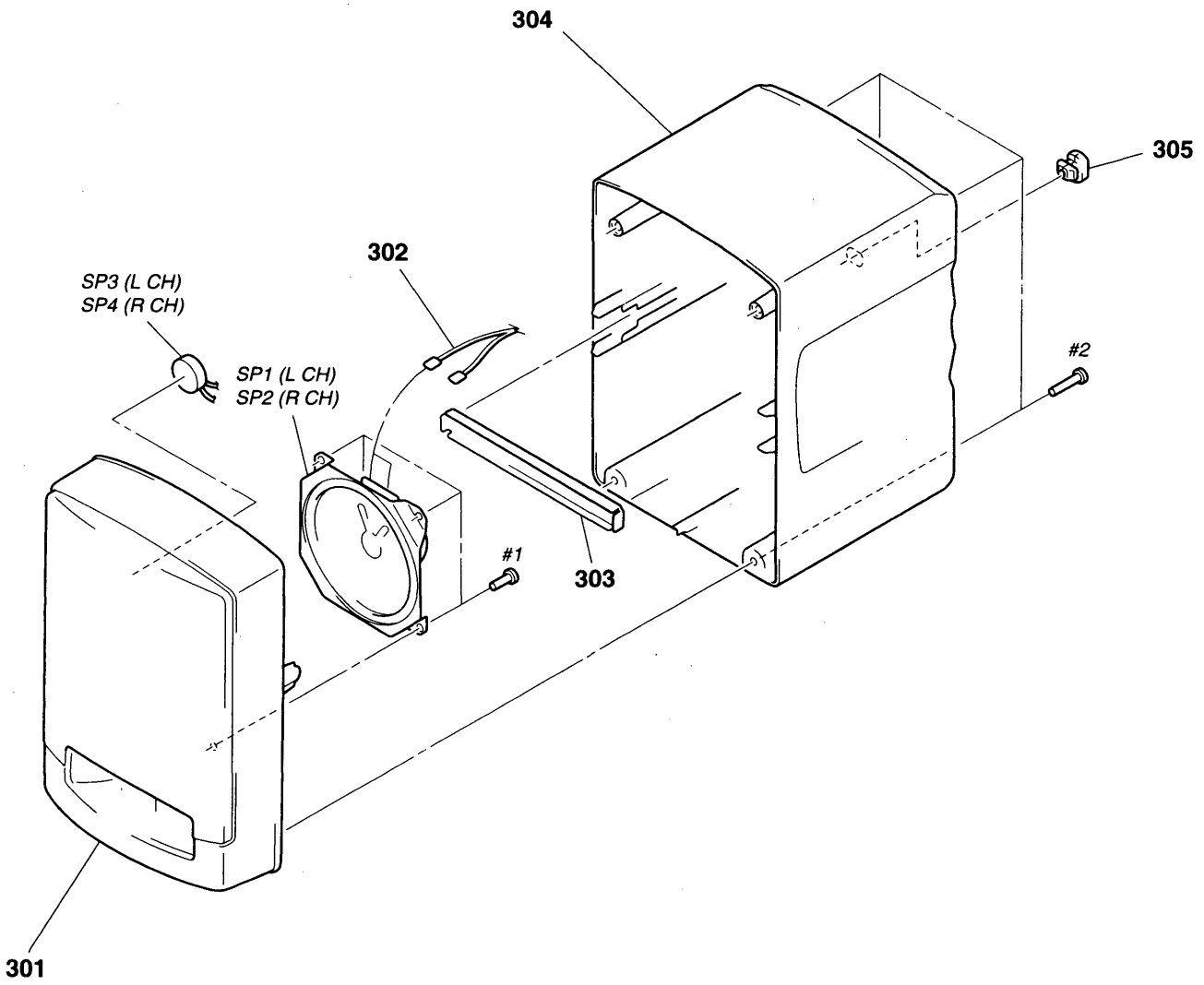
(6) OPTICAL PICK-UP SECTION (KSM-213BAN)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
251	X-2625-770-1	CHASSIS (MB),(RP)(WITH M702 SPINDEL)	
⚠252	8-848-367-11	OPTICAL PICK-UP KSS-213B	
253	2-626-907-01	GEAR (A)(S)	
254	2-627-003-01	GEAR (B)(RP)	
255	2-626-908-01	SHAFT, SLED	
M701	X-2625-769-1	GEAR ASSY (MB), MOTOR (SLED)	

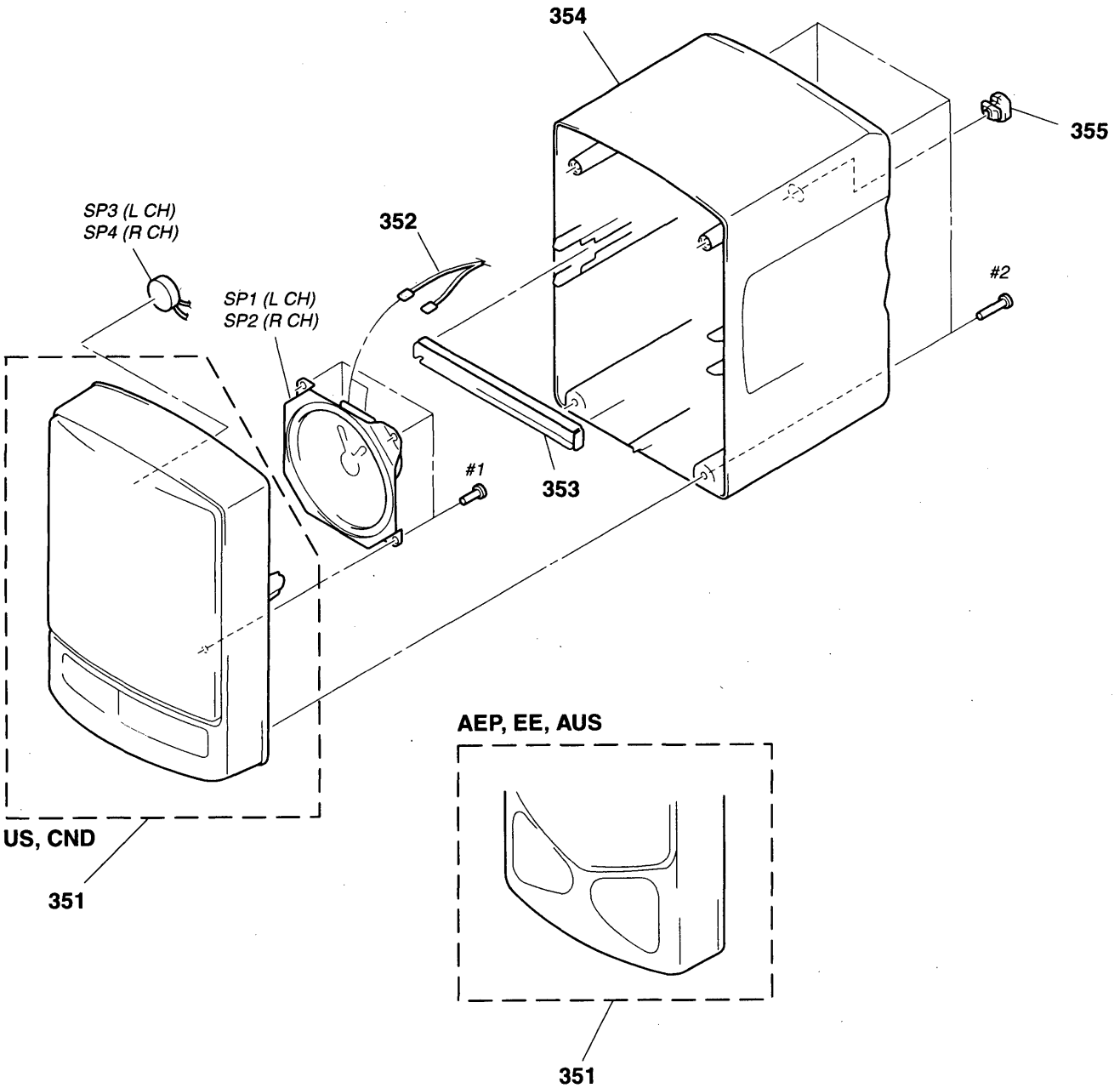
(7) SPEAKER SECTION-1 (CFD-503)



Ref. No.	Part No.	Description	Remark
301	X-3371-671-1	CABINET (FRONT)(SPK) SUB ASSY	
302	1-558-848-11	CORD, SPEAKER	
* 303	3-933-230-01	BRACKET (SPK)	
* 304	3-933-228-01	CABINET (REAR.SP.L)	
* 304	3-933-232-01	CABINET (REAR.SP.R)	

Ref. No.	Part No.	Description	Remark
* 305	3-933-229-01	STOPPER, CORD	
SP1	1-504-269-21	SPEAKER (10CM)(L CH)	
SP2	1-504-269-21	SPEAKER (10CM)(R CH)	
SP3	1-504-547-11	BUZZER (2 CH) (L CH)	
SP4	1-504-547-11	BUZZER (2 CH) (R CH)	

(8) SPEAKER SECTION-2 (CFD-505)



Ref. No.	Part No.	Description	Remark
351	X-3371-669-1	CABINET (FRONT)(SPK) SUB ASSY (US,CND)	
351	X-3371-670-1	CABINET (FRONT)(SPK) SUB ASSY (AEP, EE, AUS)	
352	1-558-848-11	CORD, SPEAKER	
* 353	3-933-230-01	BRACKET (SPK)	
* 354	3-933-228-01	CABINET (REAR.SP.L)	
* 354	3-933-232-01	CABINET (REAR.SP.R)	
* 355	3-933-229-01	STOPPER, CORD	
SP1	1-504-269-21	SPEAKER (10CM)(L CH)	
SP2	1-504-269-21	SPEAKER (10CM)(R CH)	
SP3	1-504-547-11	BUZZER (2CH)(L CH)	
SP4	1-504-547-11	BUZZER (2CH)(R CH)	

CD MAIN

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviation
  AUS : Australian
  CND : Canadian
  EE : East European

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description				Remark
*	A-3305-638-A	CD MAIN BOARD, COMPLETE (US)				
*	A-3305-743-A	CD MAIN BOARD, COMPLETE (CND)				
*	A-3305-801-A	CD MAIN BOARD, COMPLETE (AEP, EE, AUS)				
		**********				
		< CAPACITOR >				
C700	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C701	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C702	1-130-495-00	MYLAR	0.1uF	5%	50V	
C703	1-130-495-00	MYLAR	0.1uF	5%	50V	
C704	1-130-495-00	MYLAR	0.1uF	5%	50V	
C705	1-131-375-00	TANTALUM	4.7uF	10%	10V	
C706	1-130-489-00	MYLAR	0.033uF	5%	50V	
C707	1-130-486-00	MYLAR	0.018uF	10%	50V	
C708	1-162-199-31	CERAMIC	10PF	5%	50V	
C709	1-126-962-11	ELECT	3.3uF	20%	50V	
C710	1-137-375-11	FILM	0.068uF	5%	50V	
C711	1-162-215-31	CERAMIC	47PF	5%	50V	
C712	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C713	1-130-489-00	MYLAR	0.033uF	5%	50V	
C714	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C715	1-130-489-00	MYLAR	0.033uF	5%	50V	
C716	1-136-169-00	FILM	0.22uF	5%	50V	
C717	1-104-664-11	ELECT	47uF	20%	10V	
C718	1-124-907-11	ELECT	10uF	20%	50V	
C721	1-137-374-11	FILM	0.047uF	5%	50V	
C722	1-161-494-00	CERAMIC	0.022uF		25V	
C723	1-130-495-00	MYLAR	0.1uF	5%	50V	
C725	1-162-201-31	CERAMIC	12PF	5%	50V	
C726	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C727	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C728	1-164-159-21	CERAMIC	0.1uF		50V	
C729	1-104-664-11	ELECT	47uF	20%	10V	
C730	1-124-472-11	ELECT	470uF	20%	10V	
C731	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C732	1-130-484-00	MYLAR	0.012uF	5%	50V	
C734	1-162-305-11	CERAMIC	0.0068uF	30%	16V	
C737	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C738	1-164-159-21	CERAMIC	0.1uF		50V	
C741	1-104-664-11	ELECT	47uF	20%	10V	
C742	1-136-173-00	FILM	0.47uF	5%	50V	
C743	1-162-290-31	CERAMIC	470PF	10%	50V	
C744	1-162-286-21	CERAMIC	220PF	10%	50V	
C745	1-136-169-00	FILM	0.22uF	5%	50V	
C746	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C747	1-137-370-11	FILM	0.01uF	5%	50V	
C752	1-162-209-31	CERAMIC	27PF	5%	50V	
C753	1-162-209-31	CERAMIC	27PF	5%	50V	
C754	1-104-666-11	ELECT	220uF	20%	10V	
C755	1-130-495-00	MYLAR	0.1uF	5%	50V	
C756	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C758	1-162-282-31	CERAMIC	100PF	10%	50V	
C759	1-164-159-21	CERAMIC	0.1uF		50V	
C760	1-104-666-11	ELECT	220uF	20%	10V	
C763	1-162-600-11	CERAMIC	0.0047uF	30%	16V	
C764	1-126-963-11	ELECT	4.7uF	20%	50V	
C773	1-162-600-11	CERAMIC	0.0047uF	30%	16V	
C774	1-126-963-11	ELECT	4.7uF	20%	50V	
C780	1-164-159-21	CERAMIC	0.1uF		50V	
C781	1-104-666-11	ELECT	220uF	20%	10V	
C782	1-162-294-31	CERAMIC	0.001uF	10%	50V	

Ref. No.	Part No.	Description				Remark
C784	1-137-374-11	FILM	0.047uF	5%	50V	
C787	1-104-666-11	ELECT	220uF	20%	10V	
C788	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C791	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C792	1-162-282-31	CERAMIC	100PF	10%	50V	
C793	1-162-282-31	CERAMIC	100PF	10%	50V	
C794	1-162-282-31	CERAMIC	100PF	10%	50V	
C795	1-164-159-21	CERAMIC	0.1uF		50V	
C796	1-162-306-11	CERAMIC	0.01uF	30%	16V	
		< CONNECTOR >				
CNP701	1-770-168-11	CONNECTOR, FFC/FPC 16P				
* CNP703	1-695-108-11	PIN, CONNECTOR (PC BOARD) 6P				
* CNP704	1-695-110-11	PIN, CONNECTOR (PC BOARD) 8P				
CNP706	1-750-231-11	CONNECTOR, FFC/FPC 14P				
		< IC >				
IC701	8-752-069-56	IC CXA1782BQ				
IC702	8-752-372-94	IC CXD2507AQ				
IC703	8-759-336-75	IC BA5930FP				
IC704	8-759-426-44	IC SM5877AM				
		< COIL >				
L713	1-410-750-41	INDUCTOR 0.47uH (EXCEPT CND)				
L760	1-410-750-41	INDUCTOR 0.47uH (EXCEPT CND)				
L770	1-410-750-41	INDUCTOR 0.47uH (EXCEPT CND)				
		< TRANSISTOR >				
Q701	8-729-801-84	TRANSISTOR 2SB1013-4				
Q703	8-729-900-74	TRANSISTOR DTC143TS				
		< RESISTOR >				
R700	1-249-429-11	CARBON	10K	5%	1/4W	
R701	1-249-441-11	CARBON	100K	5%	1/4W	
R702	1-247-896-11	CARBON	510K	5%	1/4W	
R703	1-249-441-11	CARBON	100K	5%	1/4W	
R704	1-247-883-00	CARBON	150K	5%	1/4W	
R705	1-249-437-11	CARBON	47K	5%	1/4W	
R706	1-247-876-11	CARBON	75K	5%	1/4W	
R707	1-249-432-11	CARBON	18K	5%	1/4W	
R708	1-247-883-00	CARBON	150K	5%	1/4W	
R709	1-247-862-11	CARBON	20K	5%	1/4W	
R710	1-249-393-11	CARBON	10	5%	1/4W	
R714	1-247-883-00	CARBON	150K	5%	1/4W	
R716	1-249-430-11	CARBON	12K	5%	1/4W	
R717	1-249-429-11	CARBON	10K	5%	1/4W	
R718	1-247-899-11	CARBON	680K	5%	1/4W	
R720	1-247-891-00	CARBON	330K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R722	1-249-439-11	CARBON	68K	5%	1/4W	
R723	1-249-440-11	CARBON	82K	5%	1/4W	
R725	1-249-437-11	CARBON	47K	5%	1/4W	
R726	1-249-429-11	CARBON	10K	5%	1/4W	
R727	1-249-429-11	CARBON	10K	5%	1/4W	
R730	1-249-435-11	CARBON	33K	5%	1/4W	
R731	1-247-863-91	CARBON	22K	5%	1/4W	
R732	1-249-429-11	CARBON	10K	5%	1/4W	
R733	1-249-435-11	CARBON	33K	5%	1/4W	
R734	1-249-437-11	CARBON	47K	5%	1/4W	
R735	1-249-425-11	CARBON	4.7K	5%	1/4W	
R736	1-249-429-11	CARBON	10K	5%	1/4W	
R740	1-249-423-11	CARBON	3.3K	5%	1/4W	
R741	1-249-417-11	CARBON	1K	5%	1/4W	
R742	1-249-429-11	CARBON	10K	5%	1/4W	
R743	1-247-903-00	CARBON	1M	5%	1/4W	
R744	1-247-887-00	CARBON	220K	5%	1/4W	
R745	1-249-429-11	CARBON	10K	5%	1/4W	
R746	1-249-437-11	CARBON	47K	5%	1/4W	
R748	1-249-429-11	CARBON	10K	5%	1/4W	
R749	1-249-429-11	CARBON	10K	5%	1/4W	
R750	1-249-417-11	CARBON	1K	5%	1/4W	
R751	1-249-429-11	CARBON	10K	5%	1/4W	
R752	1-249-421-11	CARBON	2.2K	5%	1/4W	
R753	1-249-429-11	CARBON	10K	5%	1/4W	
R756	1-249-440-11	CARBON	82K	5%	1/4W	
R757	1-249-439-11	CARBON	68K	5%	1/4W	
R758	1-249-439-11	CARBON	68K	5%	1/4W	
R759	1-249-439-11	CARBON	68K	5%	1/4W	
R766	1-249-417-11	CARBON	1K	5%	1/4W	
R776	1-249-417-11	CARBON	1K	5%	1/4W	
R780	1-249-417-11	CARBON	1K	5%	1/4W	
R781	1-249-417-11	CARBON	1K	5%	1/4W	
R782	1-249-417-11	CARBON	1K	5%	1/4W	
R787	1-249-417-11	CARBON	1K	5%	1/4W	
R788	1-249-417-11	CARBON	1K	5%	1/4W	
R791	1-249-425-11	CARBON	4.7K	5%	1/4W	
R792	1-249-429-11	CARBON	10K	5%	1/4W	
R793	1-249-417-11	CARBON	1K	5%	1/4W	(US)
R794	1-249-417-11	CARBON	1K	5%	1/4W	(US)
R795	1-249-417-11	CARBON	1K	5%	1/4W	(US)
R796	1-249-417-11	CARBON	1K	5%	1/4W	(US)
		< VARIABLE RESISTOR >				
RV701	1-230-497-11	RES, ADJ, CARBON 22K				
RV702	1-230-497-11	RES, ADJ, CARBON 22K				
RV703	1-241-783-11	RES, ADJ, CERMET 2.2K				
RV704	1-230-497-11	RES, ADJ, CARBON 22K				

Ref. No.	Part No.	Description				Remark
		< VIBRATOR >				
X701	1-579-345-11	VIBRATOR, CERAMIC (16.9344MHz)				
**********						
*	1-660-007-11	CD MOTOR BOARD				
		**********				
		< SWITCH >				
S701	1-571-936-11	SWITCH, LEAF (LIMIT)				
**********						
*	A-3305-639-A	CONTROL BOARD, COMPLETE				
		**********				
*	1-573-287-11	HOLDER, CABLE 2P				
*	3-934-268-01	HOLDER (LCD)				
		< CAPACITOR >				
C801	1-124-903-11	ELECT	1uF	20%	50V	
C802	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C803	1-124-907-11	ELECT	10uF	20%	50V	
C808	1-162-306-11	CERAMIC	0.01uF	30%	16V	
		< CONNECTOR >				
* CNP801	1-695-375-31	PIN, CONNECTOR (PC BOARD) 14P				
		< IC >				
IC801	8-752-872-47	IC CXP5084H-680Q				
IC802	8-759-256-72	IC PST994D				
		< LIQUID CRYSTAL DISPLAY >				
LCD801	1-801-118-11	LCD				
		< RESISTOR >				
R801	1-249-435-11	CARBON	33K	5%	1/4W	
R802	1-249-435-11	CARBON	33K	5%	1/4W	
R803	1-249-435-11	CARBON	33K	5%	1/4W	
R805	1-249-437-11	CARBON	47K	5%	1/4W	
R806	1-247-807-31	CARBON	100	5%	1/4W	
		< SWITCH >				
S801	1-572-199-11	SWITCH, KEY BOARD (DISPLAY/ENTER)				
S802	1-572-199-11	SWITCH, KEY BOARD (PLAY MODE)				
S803	1-572-199-11	SWITCH, KEY BOARD (■)				
S804	1-572-199-11	SWITCH, KEY BOARD (▶▶I)				
S805	1-572-199-11	SWITCH, KEY BOARD (▶II)				
S806	1-572-199-11	SWITCH, KEY BOARD (I◀◀)				
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Ref. No.	Part No.	Description				Remark
*	A-3305-637-A	MAIN BOARD, COMPLETE (503:US)				
*	A-3305-741-A	MAIN BOARD, COMPLETE (503:CND)				
*	A-3305-667-A	MAIN BOARD, COMPLETE (505:US)				
*	A-3305-740-A	MAIN BOARD, COMPLETE (505:CND)				
*	A-3305-799-A	MAIN BOARD, COMPLETE (AEP)				
*	A-3305-802-A	MAIN BOARD, COMPLETE (EE)				
*	A-3305-827-A	MAIN BOARD, COMPLETE (AUS)				
		**********				
*	1-573-288-11	HOLDER, CABLE 8P				
*	1-573-287-11	HOLDER, CABLE 2P				
	3-933-207-01	GEAR (PVC)				
	7-621-770-87	SCREW +P 2.6X5				
	7-685-871-01	SCREW +BVTT 3X6 (S)				
		< BAND PASS FILTER >				
BPF1	1-236-711-21	FILTER, BAND PASS (EXCEPT EE)				
BPF1	1-239-907-21	FILTER, BAND PASS (EE)				
		< CAPACITOR >				
C2	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C3	1-124-443-00	ELECT	100uF	20%	10V	
C5	1-162-207-31	CERAMIC	22PF	5%	50V	(US, CND, AUS)
C5	1-162-208-31	CERAMIC	24PF	5%	50V(AEP)	
C5	1-162-197-31	CERAMIC	6.8PF	10%	50V(EE)	
C6	1-102-959-00	CERAMIC	22PF	5%	50V(US, CND)	
C6	1-102-961-00	CERAMIC	27PF	5%	50V(AEP)	
C6	1-102-949-00	CERAMIC	12PF	5%	50V(EE)	
C6	1-102-960-00	CERAMIC	24PF	5%	50V(AUS)	
C7	1-162-197-31	CERAMIC	6.8PF	10%	50V(US, CND)	
C7	1-162-198-31	CERAMIC	8.2PF	10%	50V	(AEP, EE, AUS)
C8	1-162-193-31	CERAMIC	3.3PF	10%	50V	
C9	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C10	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C11	1-126-963-11	ELECT	4.7uF	20%	50V	
C12	1-124-903-11	ELECT	1uF	20%	50V	
C13	1-104-664-11	ELECT	47uF	20%	10V	
C14	1-124-443-00	ELECT	100uF	20%	10V	
C15	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C16	1-126-961-11	ELECT	2.2uF	20%	50V	
C17	1-124-443-00	ELECT	100uF	20%	10V	
C18	1-161-053-00	CERAMIC	0.015uF	10%	50V(US, CND)	
C18	1-162-839-11	CERAMIC	0.01uF	10%	16V	(AEP, EE, AUS)
C19	1-161-053-00	CERAMIC	0.015uF	10%	50V(US, CND)	
C19	1-162-839-11	CERAMIC	0.01uF	10%	16V	(AEP, EE, AUS)
C22	1-124-903-11	ELECT	1uF	20%	50V	
C23	1-124-902-00	ELECT	0.47uF	20%	50V	
C24	1-126-963-11	ELECT	4.7uF	20%	50V	
C32	1-162-294-31	CERAMIC	0.001uF	10%	50V	(EXCEPT US, EE)

Ref. No.	Part No.	Description				Remark
C33	1-162-282-31	CERAMIC	100PF	10%	50V	
C34	1-162-282-31	CERAMIC	100PF	10%	50V(US)	
C35	1-162-282-31	CERAMIC	100PF	10%	50V(US)	
C36	1-162-294-31	CERAMIC	0.001uF	10%	50V(US)	
C37	1-162-294-31	CERAMIC	0.001uF	10%	50V(US)	
C101	1-162-301-11	CERAMIC	0.0015uF	20%	16V	
C102	1-104-664-11	ELECT	47uF	20%	10V	
C103	1-161-020-11	CERAMIC	0.039uF	10%	16V	
C104	1-162-302-11	CERAMIC	0.0022uF	20%	16V	
C105	1-162-215-31	CERAMIC	47PF	5%	50V	
C106	1-124-902-00	ELECT	0.47uF	20%	50V	
C108	1-124-902-00	ELECT	0.47uF	20%	50V	
C109	1-124-907-11	ELECT	10uF	20%	50V	
C110	1-162-282-31	CERAMIC	100PF	10%	50V	
C122	1-124-903-11	ELECT	1uF	20%	50V	
C132	1-162-282-31	CERAMIC	100PF	10%	50V	
C133	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C134	1-126-963-11	ELECT	4.7uF	20%	50V	
C135	1-124-903-11	ELECT	1uF	20%	50V	
C151	1-104-664-11	ELECT	47uF	20%	10V	
C152	1-162-301-11	CERAMIC	0.0015uF	20%	16V	
C153	1-124-443-00	ELECT	100uF	20%	10V	
C154	1-124-473-11	ELECT	1000uF	20%	10V	
C155	1-130-495-00	MYLAR	0.1uF	5%	50V	
C156	1-162-282-31	CERAMIC	100PF	10%	50V	
C201	1-162-301-11	CERAMIC	0.0015uF	20%	16V	
C202	1-104-664-11	ELECT	47uF	20%	10V	
C203	1-161-020-11	CERAMIC	0.039uF	10%	16V	
C204	1-162-302-11	CERAMIC	0.0022uF	20%	16V	
C205	1-162-215-31	CERAMIC	47PF	5%	50V	
C206	1-124-902-00	ELECT	0.47uF	20%	50V	
C208	1-124-902-00	ELECT	0.47uF	20%	50V	
C209	1-124-907-11	ELECT	10uF	20%	50V	
C210	1-162-282-31	CERAMIC	100PF	10%	50V	
C222	1-124-903-11	ELECT	1uF	20%	50V	
C232	1-162-282-31	CERAMIC	100PF	10%	50V	
C233	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C234	1-126-963-11	ELECT	4.7uF	20%	50V	
C235	1-124-903-11	ELECT	1uF	20%	50V	
C251	1-104-664-11	ELECT	47uF	20%	10V	
C252	1-162-301-11	CERAMIC	0.0015uF	20%	16V	
C253	1-124-443-00	ELECT	100uF	20%	10V	
C254	1-124-473-11	ELECT	1000uF	20%	10V	
C255	1-130-495-00	MYLAR	0.1uF	5%	50V	
C256	1-162-282-31	CERAMIC	100PF	10%	50V	
C301	1-124-443-00	ELECT	100uF	20%	10V	
C302	1-104-666-11	ELECT	220uF	20%	10V	
C304	1-124-472-11	ELECT	470uF	20%	10V	
C305	1-162-302-11	CERAMIC	0.0022uF	20%	16V	
C306	1-126-233-11	ELECT	22uF	20%	50V	

Ref. No.	Part No.	Description				Remark
C307	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C311	1-162-301-11	CERAMIC	0.0015uF	20%	16V	
C312	1-104-664-11	ELECT	47uF	20%	10V	
C313	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C314	1-124-907-11	ELECT	10uF	20%	50V	
C316	1-126-963-11	ELECT	4.7uF	20%	50V	
C331	1-124-443-00	ELECT	100uF	20%	10V	
C332	1-126-963-11	ELECT	4.7uF	20%	50V	
C333	1-126-961-11	ELECT	2.2uF	20%	50V	
C334	1-164-159-21	CERAMIC	0.1uF	50V(505)		
C341	1-126-937-11	ELECT	4700uF	20%	16V	
C342	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C343	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C344	1-124-443-00	ELECT	100uF	20%	10V	
C345	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C346	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C347	1-104-666-11	ELECT	220uF	20%	10V	
C351	1-124-120-11	ELECT	220uF	20%	25V	
C352	1-162-306-11	CERAMIC	0.01uF	30%	16V(505)	
C353	1-124-902-00	ELECT	0.47uF	20%	50V(505)	
		< FILTER >				
CF1	1-760-237-11	FILTER, CERAMIC				
CF3	1-760-237-11	FILTER, CERAMIC				
		< ENCAPSULATED COMPONENT >				
CFT1	1-239-724-11	ENCAPSULATED COMPONENT				
		< CONNECTOR >				
* CNP302	1-691-577-11	PIN, CONNECTOR (PC BOARD) 6P				
CNP304	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P				
		< VARIABLE CAPACITOR >				
CT1-4	1-151-696-11	CAP, VAR (US, CND)				
CT1-4	1-151-695-11	CAP, VAR (AEP, AUS)				
CT1-4	1-151-697-11	CAP, VAR (EE)				
CV1-4	1-151-696-11	CAP, VAR (US, CND)				
CV1-4	1-151-695-11	CAP, VAR (AEP, AUS)				
CV1-4	1-151-697-11	CAP, VAR (EE)				
		< DIODE >				
D1	8-719-938-69	LED GL3PR8 (FM ST)				
D2	8-719-991-33	DIODE 1SS133T-77				
D3	8-719-991-33	DIODE 1SS133T-77				
D301	8-719-991-33	DIODE 1SS133T-77				
D302	8-719-991-33	DIODE 1SS133T-77				
D303	8-719-991-33	DIODE 1SS133T-77				
D304	8-719-991-33	DIODE 1SS133T-77				

MAIN

Ref. No.	Part No.	Description	Remark
D305	8-719-991-33	DIODE 1SS133T-77	
D306	8-719-991-33	DIODE 1SS133T-77	
D307	8-719-991-33	DIODE 1SS133T-77	
D308	8-719-991-33	DIODE 1SS133T-77	
D309	8-719-991-33	DIODE 1SS133T-77 (EXCEPT US)	
D310	8-719-938-69	LED GL3PR8 (OPR/BATT)	
D311	8-719-109-98	DIODE RD6.8ES-B3	
D312	8-719-109-90	DIODE RD5.6ESB3	
D351	8-719-991-33	DIODE 1SS133T-77 (505)	
		< IC >	
IC1	8-752-050-20	IC CXA1238S	
IC301	8-759-264-71	IC TA2068N	
IC303	8-752-067-34	IC CXA1352AS	
IC304	8-759-820-22	IC LA4597	
		< JACK >	
J301	1-566-891-11	JACK (PHONES)	
J302	1-537-421-11	TERMINAL BOARD (SP)(SPEAKER OUTPUT)	
		< RESISTOR >	
JW8	1-247-807-31	CARBON 100 5% 1/4W (CND)	
JW8	1-249-411-11	CARBON 330 5% 1/4W (EE)	
		< COIL >	
L1	1-406-998-11	COIL, AIR-CORE (EXCEPT EE)	
L1	1-409-776-11	COIL, AIR-CORE (EE)	
L2	1-422-230-11	COIL, AIR-CORE (US, CND, AUS)	
L2	1-411-387-11	COIL, AIR-CORE (AEP)	
L2	1-460-350-11	COIL (WITH CORE)(EE)	
L3	1-402-577-11	ANTENNA, FERRITE-ROD (MW)(US, CND)	
L3	1-402-577-31	ANTENNA, FERRITE-ROD (MW)(AEP, EE, AUS)	
L4	1-406-464-51	COIL (OSC)	
L151	1-414-146-31	INDUCTOR 2.2uH (EXCEPT CND)	
L251	1-414-146-31	INDUCTOR 2.2uH (EXCEPT CND)	
L301	1-410-397-21	FERRITE BEAD INDUCTOR (EXCEPT CND)	
L302	1-410-397-21	FERRITE BEAD INDUCTOR (EXCEPT CND)	
L351	1-414-146-31	INDUCTOR 2.2uH (EXCEPT CND)	
		< TRANSISTOR >	
Q1	8-729-921-65	TRANSISTOR DTC143ES	
Q2	8-729-921-65	TRANSISTOR DTC143ES (AEP, EE)	
Q101	8-729-900-74	TRANSISTOR DTC143TS	
Q201	8-729-900-74	TRANSISTOR DTC143TS	
Q301	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q302	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q303	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q304	8-729-029-46	TRANSISTOR DTA143ES	
Q305	8-729-921-65	TRANSISTOR DTC143ES	
Q306	8-729-921-65	TRANSISTOR DTC143ES	
Q307	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q308	8-729-921-65	TRANSISTOR DTC143ES	
Q309	8-729-021-82	TRANSISTOR 2SD2396K	
Q310	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q312	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q313	8-729-029-46	TRANSISTOR DTA143ES	
Q314	8-729-921-65	TRANSISTOR DTC143ES	
Q315	8-729-178-55	TRANSISTOR 2SC2785-E (505)	
		< RESISTOR >	
R2	1-249-421-11	CARBON 2.2K 5% 1/4W	
R3	1-249-441-11	CARBON 100K 5% 1/4W	
R5	1-249-429-11	CARBON 10K 5% 1/4W	
R7	1-249-403-11	CARBON 68 5% 1/4W	
R8	1-249-427-11	CARBON 6.8K 5% 1/4W	
R9	1-249-427-11	CARBON 6.8K 5% 1/4W	
R10	1-249-435-11	CARBON 33K 5% 1/4W(AEP, EE)	
R11	1-247-887-00	CARBON 220K 5% 1/4W	
R12	1-249-421-11	CARBON 2.2K 5% 1/4W	
R13	1-247-807-31	CARBON 100 5% 1/4W	
R14	1-249-411-11	CARBON 330 5% 1/4W	
R15	1-247-887-00	CARBON 220K 5% 1/4W	
R16	1-249-423-11	CARBON 3.3K 5% 1/4W	(US)
R21	1-249-417-11	CARBON 1K 5% 1/4W	
R22	1-249-429-11	CARBON 10K 5% 1/4W	
R101	1-249-431-11	CARBON 15K 5% 1/4W	
R102	1-249-404-00	CARBON 82 5% 1/4W	
R103	1-249-441-11	CARBON 100K 5% 1/4W	
R104	1-249-423-11	CARBON 3.3K 5% 1/4W	
R105	1-249-435-11	CARBON 33K 5% 1/4W	
R106	1-249-421-11	CARBON 2.2K 5% 1/4W	
R108	1-249-429-11	CARBON 10K 5% 1/4W	
R109	1-249-426-11	CARBON 5.6K 5% 1/4W	
R110	1-247-807-31	CARBON 100 5% 1/4W	
R151	1-249-429-11	CARBON 10K 5% 1/4W	
R152	1-249-421-11	CARBON 2.2K 5% 1/4W	
R153	1-247-807-31	CARBON 100 5% 1/4W	
R154	1-247-807-31	CARBON 100 5% 1/4W	
R155	1-247-895-91	CARBON 470K 5% 1/4W	(505)
R201	1-249-431-11	CARBON 15K 5% 1/4W	
R202	1-249-404-00	CARBON 82 5% 1/4W	
R203	1-249-441-11	CARBON 100K 5% 1/4W	
R204	1-249-423-11	CARBON 3.3K 5% 1/4W	
R205	1-249-435-11	CARBON 33K 5% 1/4W	
R206	1-249-421-11	CARBON 2.2K 5% 1/4W	

Ref. No.	Part No.	Description				Remark
R208	1-249-429-11	CARBON	10K	5%	1/4W	
R209	1-249-426-11	CARBON	5.6K	5%	1/4W	
R210	1-247-807-31	CARBON	100	5%	1/4W	
R251	1-249-429-11	CARBON	10K	5%	1/4W	
R252	1-249-421-11	CARBON	2.2K	5%	1/4W	
R253	1-247-807-31	CARBON	100	5%	1/4W	
R254	1-247-807-31	CARBON	100	5%	1/4W	
R255	1-247-895-91	CARBON	470K	5%	1/4W	(505)
R301	1-247-903-00	CARBON	1M	5%	1/4W	
R303	1-247-863-91	CARBON	22K	5%	1/4W	
R304	1-249-429-11	CARBON	10K	5%	1/4W	
R306	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-249-399-11	CARBON	33	5%	1/4W	
R312	1-249-435-11	CARBON	33K	5%	1/4W	
R313	1-249-389-11	CARBON	4.7	5%	1/4W	
R314	1-249-423-11	CARBON	3.3K	5%	1/4W	
R315	1-249-423-11	CARBON	3.3K	5%	1/4W	
R316	1-249-425-11	CARBON	4.7K	5%	1/4W	
R319	1-249-441-11	CARBON	100K	5%	1/4W	
R323	1-249-423-11	CARBON	3.3K	5%	1/4W	
R324	1-249-417-11	CARBON	1K	5%	1/4W	
R331	1-249-401-11	CARBON	47	5%	1/4W	
R332	1-247-884-11	CARBON	160K	5%	1/4W	
R333	1-249-435-11	CARBON	33K	5%	1/4W	
R334	1-249-437-11	CARBON	47K	5%	1/4W	
R335	1-247-863-91	CARBON	22K	5%	1/4W	(503)
R336	1-249-435-11	CARBON	33K	5%	1/4W	(503)
R337	1-249-429-11	CARBON	10K	5%	1/4W	(505)
R338	1-249-417-11	CARBON	1K	5%	1/4W	(505)
⚠R340	1-249-381-11	CARBON	1	5%	1/4W	F (US)
R341	1-249-441-11	CARBON	100K	5%	1/4W	
R342	1-249-419-11	CARBON	1.5K	5%	1/4W	
R343	1-249-415-11	CARBON	680	5%	1/4W	
R344	1-247-815-91	CARBON	220	5%	1/4W	
R345	1-247-815-91	CARBON	220	5%	1/4W	
R346	1-249-417-11	CARBON	1K	5%	1/4W	
R347	1-247-807-31	CARBON	100	5%	1/4W	
R348	1-249-417-11	CARBON	1K	5%	1/4W	
R349	1-249-414-11	CARBON	560	5%	1/4W	
R350	1-249-393-11	CARBON	10	5%	1/4W	
R352	1-247-885-00	CARBON	180K	5%	1/4W	(505)
		< VARIABLE RESISTOR >				
RV1	1-238-601-11	RES, ADJ, CARBON 22K				
RV301	1-225-196-11	RES, VAR, CARBON 50K (VOLUME)				
RV302	1-223-644-11	RES, VAR, CARBON 50K (ROTARY EQUALIZER 100Hz)(505)				
RV303	1-223-644-11	RES, VAR, CARBON 50K (505) (ROTARY EQUALIZER 1kHz)(505)				
RV304	1-223-644-11	RES, VAR, CARBON 50K (ROTARY EQUALIZER 10kHz)(505) (TONE)(503)				
		< SWITCH >				
S1	1-571-547-11	SWITCH, SLIDE (FM MODE)(AEP, EE)				
S301	1-571-345-11	SWITCH, LEVER SLIDE (FUNCTION)				
		< TRANSFORMER >				
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR				
**********						
*	A-3305-641-A	POWER BOARD, COMPLETE (US)				
*	A-3305-742-A	POWER BOARD, COMPLETE (CND)				
*	A-3305-800-A	POWER BOARD, COMPLETE (AEP, EE, AUS)				
		**********				
	1-533-217-31	HOLDER, FUSE				
		< CAPACITOR >				
C901	1-101-005-00	CERAMIC	0.022uF		50V	
C902	1-101-005-00	CERAMIC	0.022uF		50V	
C903	1-101-005-00	CERAMIC	0.022uF		50V	
C904	1-101-005-00	CERAMIC	0.022uF		50V	
		< AC INLET >				
⚠CNJ901	1-540-009-11	INLET, AC (AC IN ~)(US, CND)				
⚠CNJ901	1-526-838-11	INLET, AC 2P(AC IN ~)(AEP, EE, AUS)				
		< CONNECTOR >				
* CNP901	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P				
		< DIODE >				
D901	8-719-046-07	DIODE 2A02M				
D902	8-719-046-07	DIODE 2A02M				
D903	8-719-046-07	DIODE 2A02M				
D904	8-719-046-07	DIODE 2A02M				
		< FUSE >				
⚠F902	1-533-618-11	FUSE, GLASS CYLINDERICAL (3.15A/250V)(US, CND)				
⚠F902	1-532-464-31	FUSE (T2.5AL/250V)(AEP, EE, AUS)				
		< COIL >				
L901	1-410-397-21	FERRITE BEAD INDUCTOR (EXCEPT CND)				
L902	1-410-397-21	FERRITE BEAD INDUCTOR (EXCEPT CND)				
		< TRANSFORMER >				
⚠T901	1-429-473-11	TRANSFORMER, POWER (US, CND)				

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POWER

Ref. No.	Part No.	Description	Remark
⚠T901	1-429-513-11	TRANSFORMER, POWER (AUS, AEP, EE)	
**********			
		MISCELLANEOUS	
		**********	
207	1-452-732-11	MAGNET	
215	1-776-512-11	WIRE, PARALLEL (FFC)(14 CORE)	
218	1-769-828-11	WIRE (FLAT TYPE)(16 CORE)	
⚠252	8-848-367-11	OPTICAL PICK-UP KSS-213B	
302	1-558-848-11	CORD, SPEAKER	
352	1-558-848-11	CORD, SPEAKER	
ANT1	1-501-362-11	ANTENNA, TELESCOPIC (FM)	
HE901	1-543-777-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-543-964-12	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M601	X-3365-538-1	MOTOR ASSY (CAPSTAN/REEL)	
M701	X-2625-769-1	GEAR ASSY (MB), MOTOR (SLED)	
S601	1-571-556-11	SWITCH, LEAF (MD POWER)	
S602	1-571-556-11	SWITCH, LEAF (REC)	
S807	1-692-960-11	SWITCH, PUSH (1 KEY)(CD OPEN)	
SP1	1-504-269-21	SPEAKER (10CM)(L CH)	
SP2	1-504-269-21	SPEAKER (10CM)(R CH)	
⚠T901	1-429-473-11	TRANSFORMER, POWER (US, CND)	
⚠T901	1-429-513-11	TRANSFORMER, POWER (AUS, AEP, EE)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S	
#3	7-682-548-09	SCREW +B 3X8	
#4	7-621-770-87	SCREW +P 2.6X5	
#5	7-621-255-25	SCREW +PTT 2X4 (S)	
#6	7-628-254-05	SCREW +PS 2.6X5	
#7	7-685-861-01	SCREW +BVTT 2.6X5 (S)	
#8	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#9	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#10	7-621-255-15	SCREW +P 2X3	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-590-147-11	CORD, POWER (US, CND)	
⚠	1-696-819-11	CORD, POWER (AUS)	
⚠	1-769-412-11	CORD, POWER (AEP, EE)	
	3-810-658-11	MANUAL, INSTRUCTION (ENGLISH)(503)	
	3-810-658-21	MANUAL, INSTRUCTION (FRENCH)(503:CND)	
	3-810-659-11	MANUAL, INSTRUCTION (ENGLISH) (505:US, CND, AUS)	
	3-810-659-21	MANUAL, INSTRUCTION (FRENCH)(505:CND)	
	3-810-659-31	MANUAL, INSTRUCTION (ENGLISH, GERMAN) (505:AEP, EE)	
	3-810-659-41	MANUAL, INSTRUCTION (FRENCH, SPANISH) (505:AEP)	
	3-810-659-51	MANUAL, INSTRUCTION (DUTCH, SWEDISH, PORTUGUESE)(505:AEP)	
*	3-933-105-01	INDIVIDUAL CARTON (503:US)	
*	3-933-106-01	INDIVIDUAL CARTON (503:CND)	
*	3-933-111-01	CUSHION (TOP)	
*	3-933-112-01	CUSHION (BOTTOM)	
*	3-933-116-01	INDIVIDUAL CARTON (505:US)	
*	3-933-117-01	INDIVIDUAL CARTON (505:CND, AUS)	
*	3-934-912-01	INDIVIDUAL CARTON (AEP, EE)	

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